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Agriculture

MANUFACTURERS RECORD

A Weekly Newspaper Devoted to the Industrial, Financial, Railroad,
Mining, Contracting, Engineering, Building, and General
Business Interests of the South and Southwest

Vol. 66
No. 17

ESTABLISHED 1882

\$4.00 Per Year
Single Copy 15 Cents

On the Cheerful Side of Things

An index to the activities in material affairs of the hundred million people of the United States is the record of annual production aggregating \$40,200,000,000 in four main lines, as follows:

From Factories	\$27,000,000,000
From Farms	\$ 9,750,000,000
From Mines	\$ 2,200,000,000
From Forests	\$ 1,250,000,000

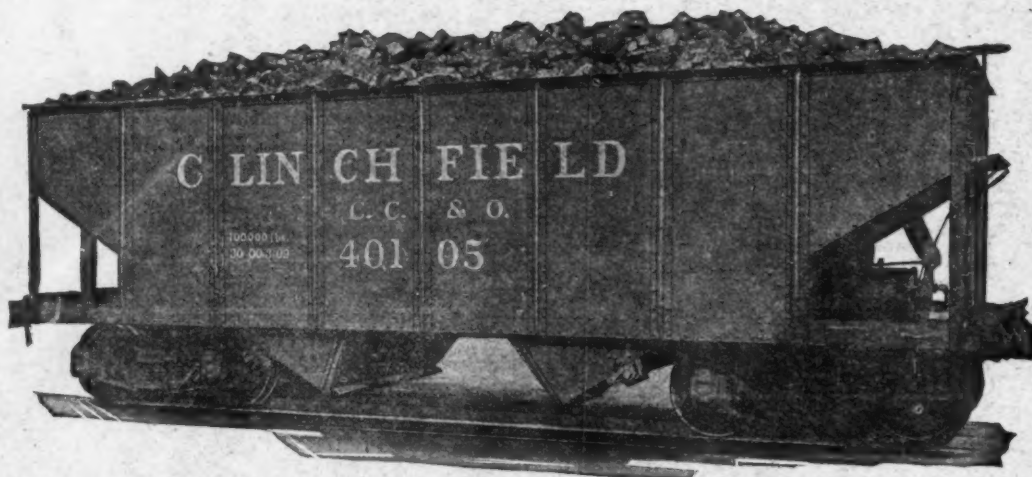
Reflecting these activities are the following leading facts about the country's financial institutions:

	NATIONAL	ALL OTHER	TOTAL
Resources	\$11,482,190,771	\$14,675,243,840	\$26,157,434,611
Capital	\$ 1,058,192,335	\$ 1,039,930,070	\$ 2,098,122,405
Deposits	\$ 6,268,692,430	\$11,522,302,583	\$17,790,995,013

BALTIMORE, OCTOBER 29, 1914

CLINCHFIELD COAL

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LUMPY

"NEVER SHORT OF CARS"

MINED BY
Clinchfield Coal Corporation
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SOLD BY
Clinchfield Fuel Company
SPARTANBURG, S. C.

*For the Manufacture of Locks
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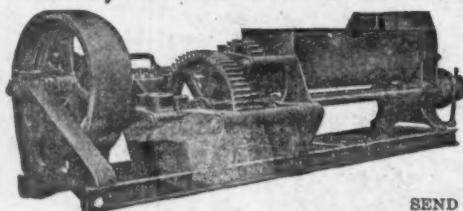
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York Safe and Lock Company
 MANUFACTURERS OF
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THE FERNHOLTZ BRICK MACHINERY CO.
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Large range of sizes and styles. Capacities from the smallest up to 150,000 bricks per day. Complete line of Automatic and Hand Cutter for all kinds of ware. Pug Mills, Disintegrators, Crushers and Brick-yard Supplies.

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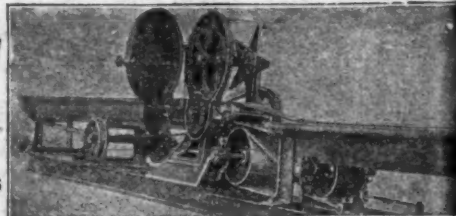
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THREE SIZES

No. 52, 6 cubic feet; No. 54, 8 cubic feet;
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Special Machinery Built

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Cut annual fuse maintenance 80% and secure positive electrical protection under all conditions.

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Over 100 public utility companies use G. V. Electrics in the United States, Canada, Brazil, and the Philippines. The New York Railways Co., for example, use 30. Write us for catalogue 90 and other data.

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General Office and Factory
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Are popular among the well-known Contractors, due to their wonderful efficiency. They can always be depended on to have the very latest improvements in dump wagons.

We never wait to turn out a new model before putting any "new ideas" on. As soon as we see an advantage we incorporate it in the Western.

When you want wagons that stand hard, continuous usage; are close coupled; have ample opening for discharge of load and many other advantages, order Westerns.

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Combined contracts for complete power units with undivided responsibility insure satisfactory service

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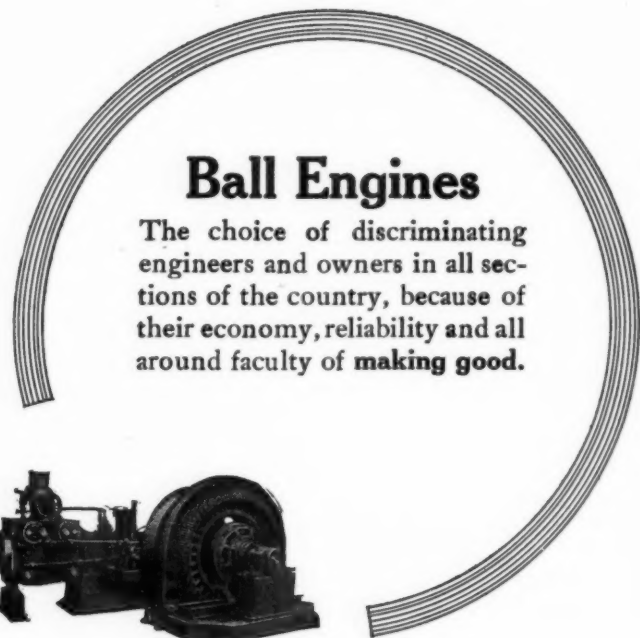
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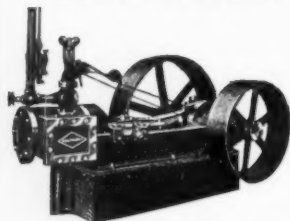
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Cut or Cast Teeth

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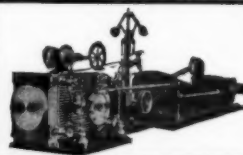
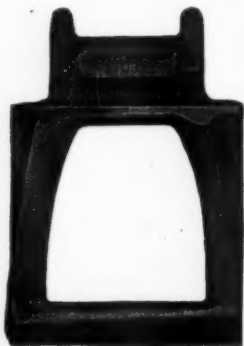
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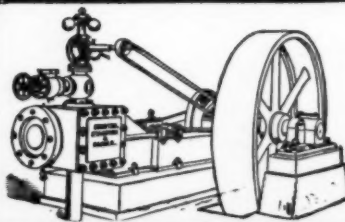
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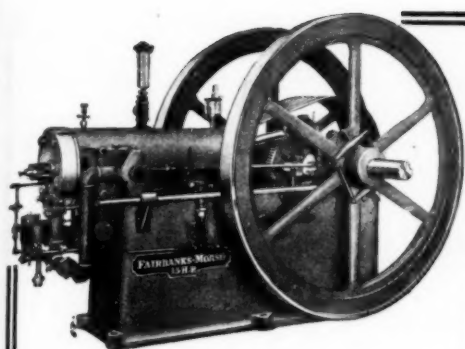
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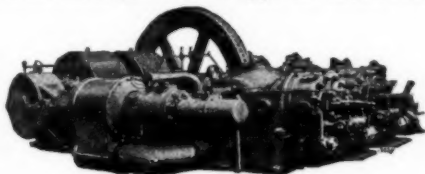
938-24G

The Snow Oil Engine is best for all grades of oil fuel

Fully described in Bulletin No. S110-29, which will be sent you on request. You will be particularly interested in what we have to say regarding the advantages of this type of engine on page 5 of Bulletin.

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It will reduce your power bill; It is simplicity itself; Its service is reliable; There is no smoke; No auxiliaries are required.



50 to 1500 H. P.

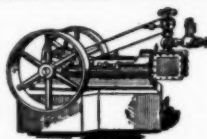
International Steam Pump Co.

Snow Steam Pump Plant

Works: Buffalo, N. Y. New York Office: 115 Broadway

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S-136.1



Schofield Engines GUARANTEED For Heavy Duty

from FACTORY to YOU

If you are looking for an engine to withstand heavy duty—an engine that is well adapted for the saw mill, oil mill and the cotton gin, or wherever an engine can be used to advantage—investigate the Schofield Engine.

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In wearing qualities and the economy of steam, the Schofield Engine is unsurpassed. Sixty-seven years of experience has enabled us to produce the highest quality and type of engine—and one we can fully guarantee.

All sizes, Center Crank type—12 horse power to 100 horse power—side crank type 50 horse power to 150 horse power.

We also manufacture boilers, tanks, towers, smoke stacks, saw mills, and all kinds of machinery—mill supplies, pipe, galvanized roofing, etc.

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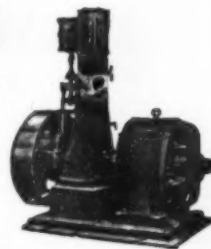
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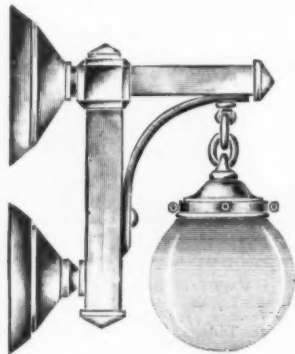
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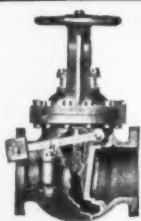
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Our product is the result of 50 years of honest boiler building

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Where Efficiency Was the "Buy Word"

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Erie City Vertical Water Tube Boilers

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Years ago a certain large bleaching and dye works installed a well-known make of boilers, and we honestly believe that the installation of their boilers contributed largely to the early success of this firm. When the time came for a new installation, you can imagine that there had to be some very strong "reasons why" to convince this firm of the superiority of Erie City Boilers.

They installed Erie City Boilers because of their greater efficiency and economy; they supply a larger amount of the best grade of steam; they have less percentage of moisture than any other boiler known, and their many other advantages too numerous to properly display here.

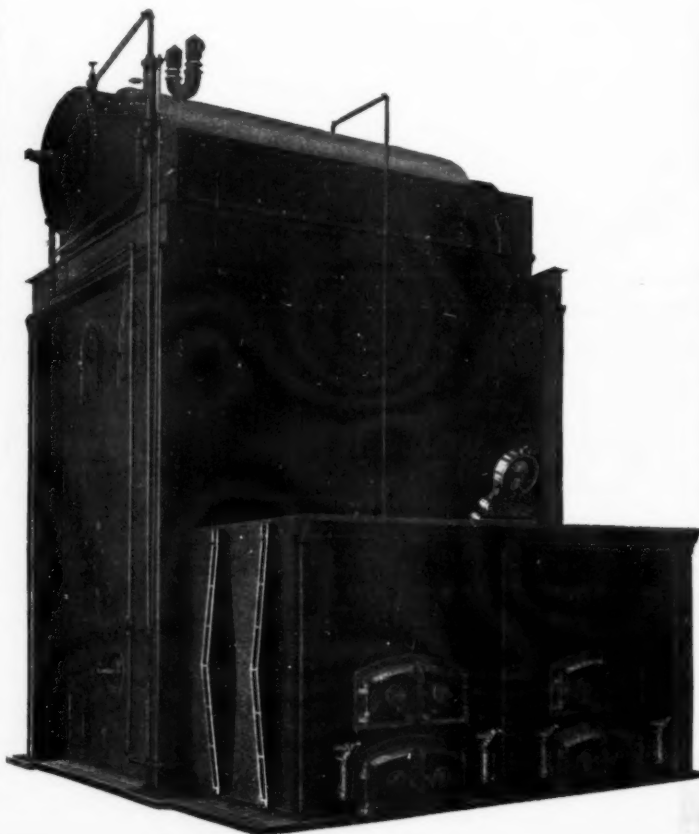
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Builders of High-Speed, Automatic and Center-Crank Engines. Horizontal and Vertical Water Tube and Return Tubular Boilers. Feed-Water Heaters. The "Lentz" Engine.



BOILER USERS IT'S THE HEATING SURFACE OF VOGT WATER TUBE BOILER



that gives you such quick steam. The heating surface consists of three rows or banks of horizontally inclined tubes, connected by cross drums, and one vertical bank of tubes in rear of boiler connecting the steam drums with the mud drum.

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PORTABLE AND HORIZONTAL TUBULAR
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The Solution of Many Expansion Joint Troubles



will be found in this New Alberger Bulletin No. 19-R. It is replete with exact data upon the subject.

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Pumps, Heaters, Injectors, Engine Supplies, and Repairs for Mills, Hotels, Public Works. Try

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Water Tube
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Special Plate and Tank Work. Offices—No. 443 Boliver Street, New Orleans, La.; Praetorian Bldg., Dallas, Texas. Main Offices and Works—Chattanooga, Tenn.



LUNKENHEIMER "Vigilant" Safety Water Columns

Will sound an alarm when the water in the boiler approaches the low or high danger limit. Made in all sizes, suitable for different makes of boilers.

Among other products manufactured by The Lunkenheim Company are **Bronze and Iron Body Bronze Mounted Globe, Angle, Cross, Check, Throttle, Gate, Non-return Boiler Stop Valves, Lever, Pop Safety, Relief, Blow-off, Screw Down Check Valves, etc.; "Puddled" Semi-steel and Cast Steel Valves** of all types; Water Gauges, Gauge Cocks and other Boiler Mountings; Whistles and Ground Key Work in great variety; Injectors and Ejectors; Lubricators and Lubricating Devices; Oil Pumps, Oil and Grease Cups; Gasoline Engine Specialties, etc.

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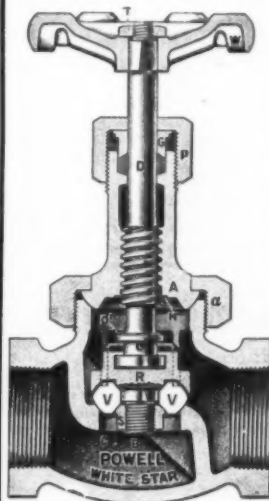
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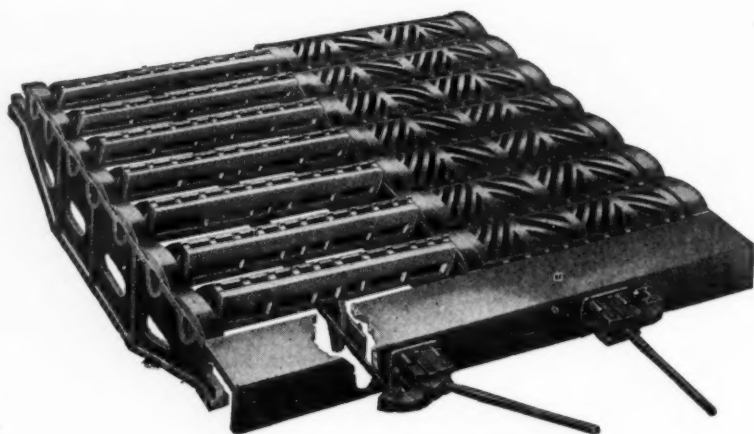
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New Orleans.....Shubert Arcade
Philadelphia.....North American Building
Pittsburgh,
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San Francisco.....90 First Street
Seattle.....Mutual Life Building



A Shut-down —Means— Money Lost

Your entire plant tied up. You can insure against this and at the same time increase the steaming of your boilers—bringing the plant to its greatest efficiency by installing the tested and superior.

Thomas Shaker Grate Bars

They are wonderful fuel savers. Reduce labor cost, as they are self-cleaning. Never get out of order. Remember Thomas has the solution of your Grate Bar troubles. Write us.

Thomas Grate Bar Co., Birmingham, Ala.



THE OTIS TUBULAR FEED WATER HEATER

Oil Separator and Purifier does not scale. The exhaust steam enters and leaves the heater at the top, passing inside of the seamless brass tubes, therefore the tubes cannot fill up with scale, as they do in other water tube heaters. This provides an oil separator and cool settling chamber in the bottom, where the sediment settles away from the tubes and remains soft mud until removed.

A manhole in the sides enables you to easily and quickly wash the heater out with a hose, or blow out the refuse through the mud blow in the conical bottom. Each heater tested at 200 lbs. hydrostatic pressure before it is shipped.

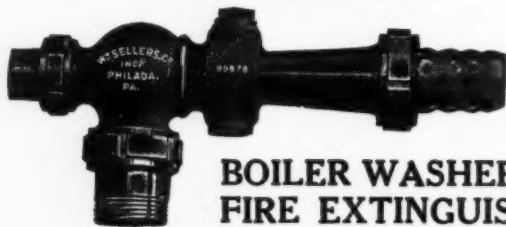
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are of special interest to
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Berkeley Springs, W. Va., July 15, 1914.

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I was pleased to get the increased capacity, but did not expect to find that with the increased capacity there would be, even then, a large saving in coal.

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Yours very truly, **W. A. ROCKWELL.**

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Dear Sirs—I wrote you some months ago regarding the splendid saving in fuel which had come from the installation of the Huber Hand Stoker in my plant about a year ago. You will be interested to know that our output for September 23 was thirty-two per cent. greater than our best record with the other grates. I would not be without it for three times its cost.

Yours very truly, **W. A. ROCKWELL.**

Find out all of the advantages and economies of the
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**Leading Railway Lubricating and
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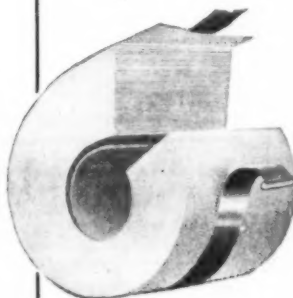
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USE the covering that saves the most money.
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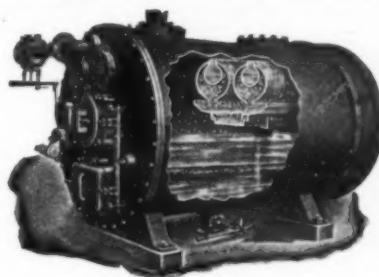
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Manufacturers Record, the Medium for Machinery Advertisements.

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Everyone knows that heating the feed water with exhaust
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When water at about 50° is heated to 210° in a

NATIONAL

Direct Contact

FEED WATER HEATER

the exhaust steam condensed becomes one-seventh of the feed
water going to the boilers. One-seventh of the water bill is saved,
as well as about twelve per cent. of the fuel.

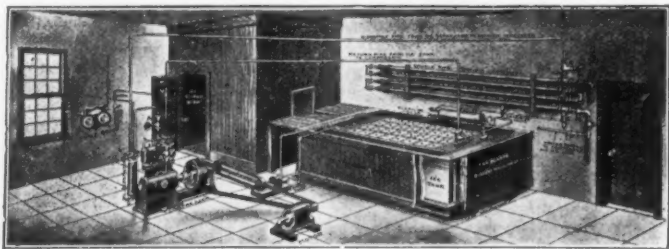
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The unique features of the contact pipes, the evident advan-
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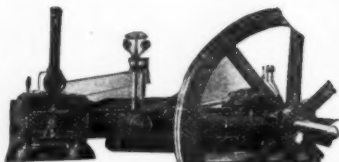
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ICE-MAKING AND
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FOR BOILER FEED AND ALL INDUSTRIAL USES

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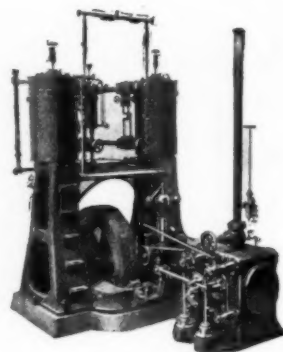
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York Refrigerating Machines

are made in a plant devoted exclusively to the manufacture of Ice-Making and Refrigerating Machinery and Supplies. This fact alone has aided us in selling many YORK Plants.

But there are other reasons why YORK Machines should receive your consideration.

They are well designed, built by expert workmen, and in actual service have demonstrated their superiority in every way.

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YORK MANUFACTURING COMPANY

(Largest Ice Machine Manufacturers in the World)

YORK, PA.

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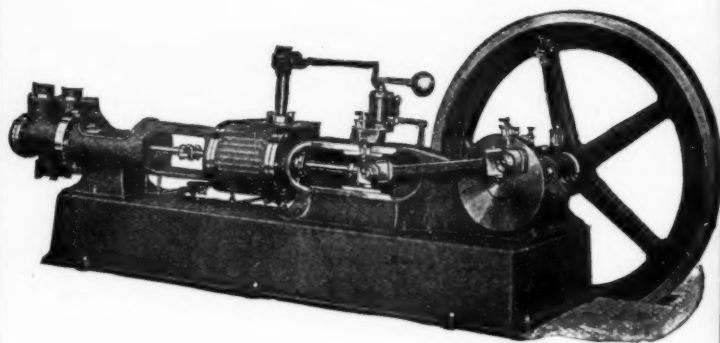
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Differs from Compression Type

THE ABSORPTION ICE MACHINE

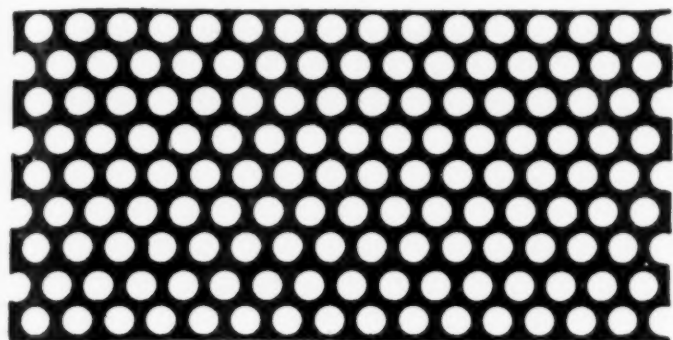
When a compression ice machine is used, there is a greater constant liability of a breakdown, especially when the machine is running at high speed. High speed is always necessary in the busy season, and it is easily seen what advantage lies in a machine which will work all through the dull as well as the busy season without a breakdown. THE ABSORPTION ICE MACHINE does this, and we want to explain it in detail to you.

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*Our new catalogue will interest
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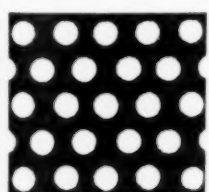
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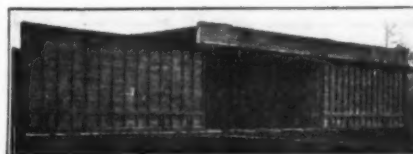
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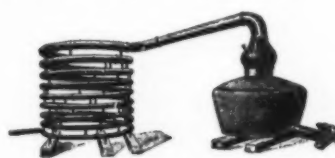
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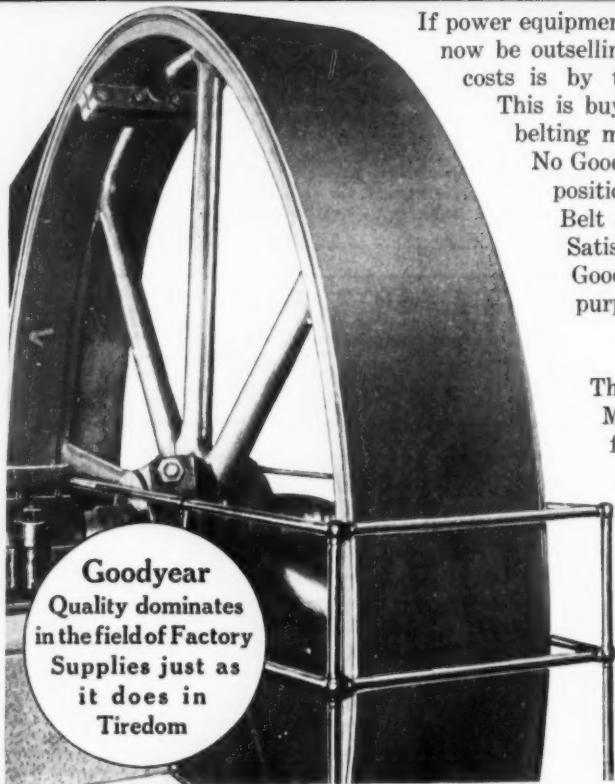
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If power equipment were bought on a price basis alone, hundreds of brands of belting would now be outselling Goodyear. But *experienced* buyers know that the only way to figure costs is by total tonnage—by freedom from breakdown—by increased production. This is buying belting by *service*—the only *right* way to get the utmost for your belting money.

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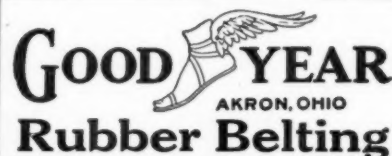
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A Trade Mark Is Only Valuable When Placed On The Goods—



Send for a trial Belt—
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Then it acts as a signed statement that the goods are as represented and holds the manufacturer to his written word.

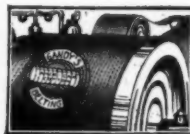
This trade mark on every foot of Schieren's Duxbak Waterproof Leather Belting means that the Belting is waterproof and chemical fume proof, perfect in material and workmanship.

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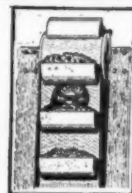
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Transmits more power than any other Canvas Stitched. Fully Guaranteed.
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The most experienced belt users will tell you that there's one best belt for most every separate purpose—that to secure maximum efficiency you must have belting adapted to each condition. If there's any one condition to which

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738 W. Pratt St., Baltimore, Md.
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Use Cotton



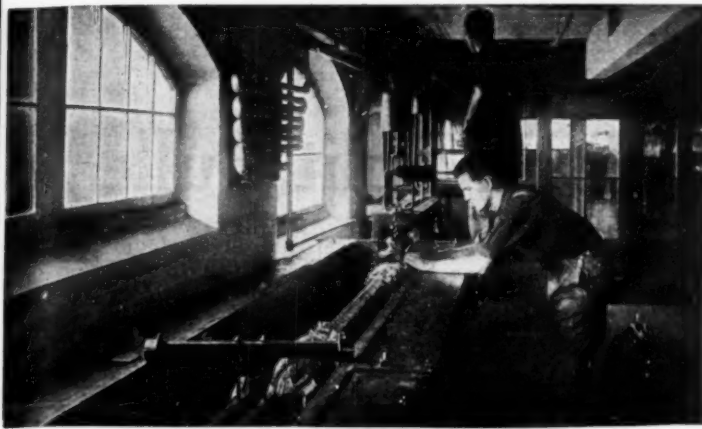
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Let us show you. Our responsibility goes beyond payment.

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Give you the assurance of uniformly high tensile strength. A pull of 45,000 pounds failed to snap this 7½-inch rope, even though this size is only expected to stand a strain of 43,000 pounds.

The PLYMOUTH method of making rope leaves no loop-hole for imperfect or uneven places—it is assurance against "weak spots." Give PLYMOUTH any test you like—it will always hold good. Every penny invested in ship trade-marked rope is a penny well spent.

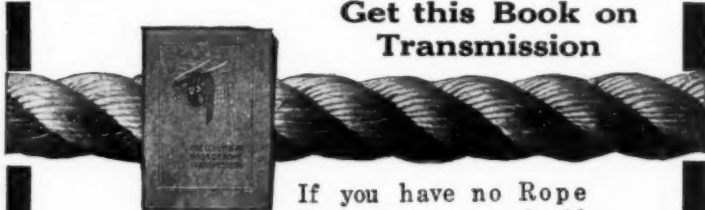


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MORE OF THEM ARE IN USE THAN ALL OTHER MAKES.
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Special Booklet "M" of Interest on the Subject.

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103

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Steel Rim, Cast Iron and Wood Pulleys, Shafting, Hangers, Gears, Sprockets, Clutches, Rope Sheaves, Etc.

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Shafting, Rope Transmission, Machine Moulded Iron or Steel Gears for Heavy Service

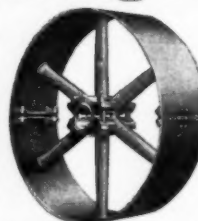


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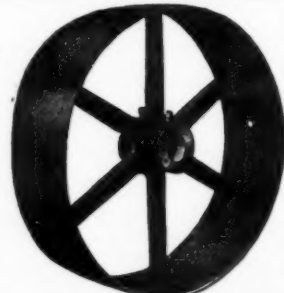


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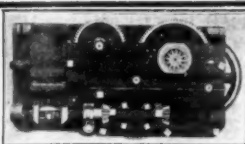
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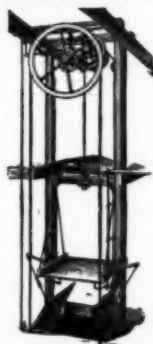
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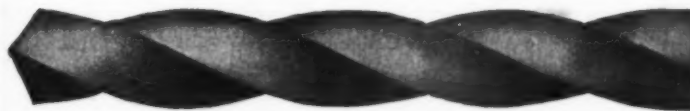
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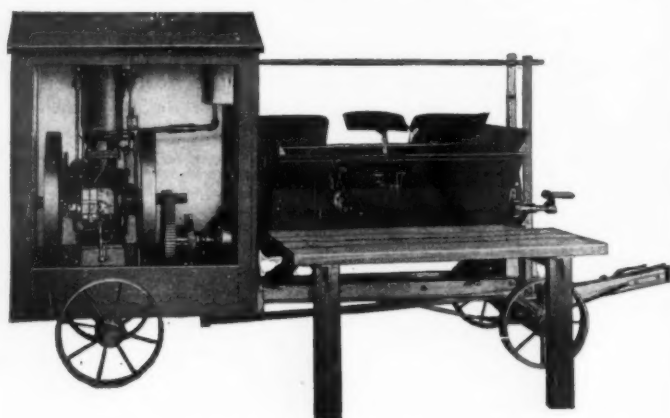
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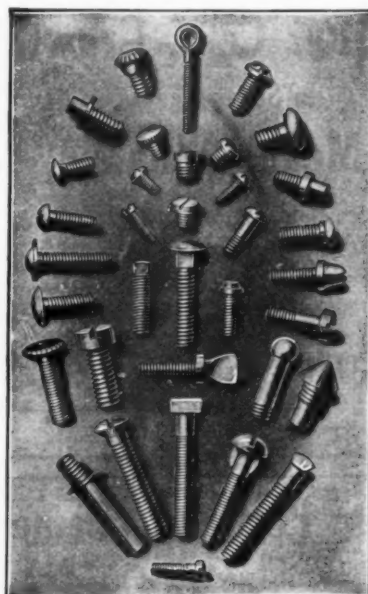
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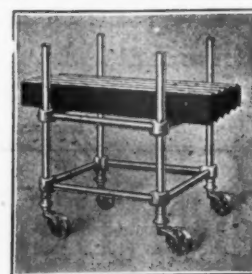
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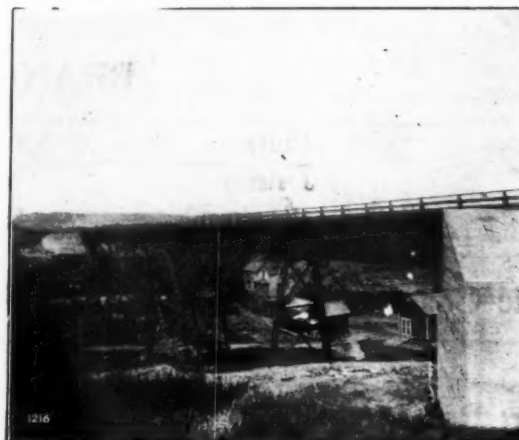
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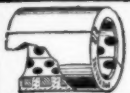
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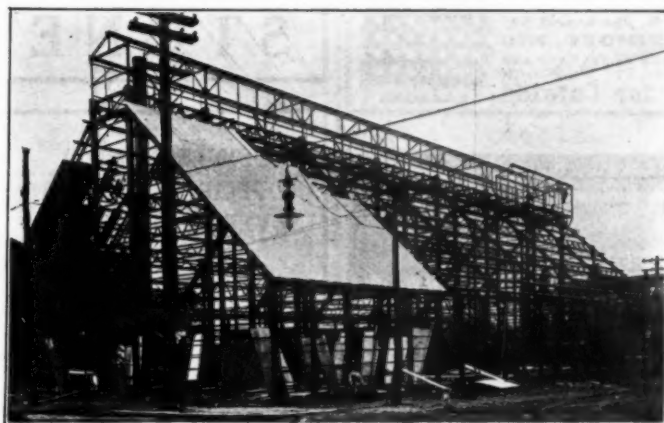
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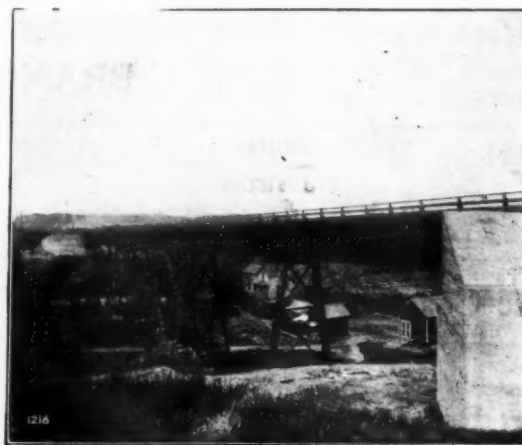
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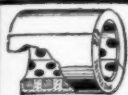
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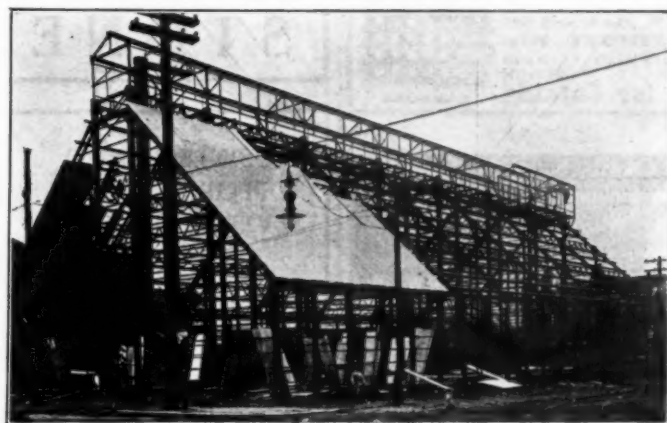
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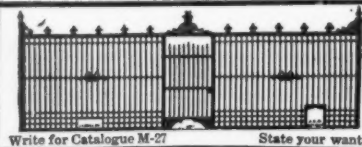
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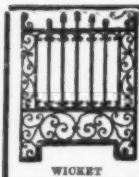
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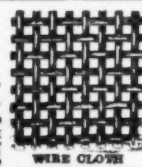
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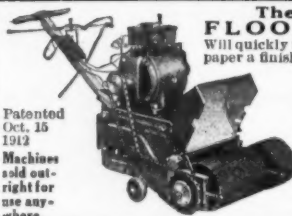
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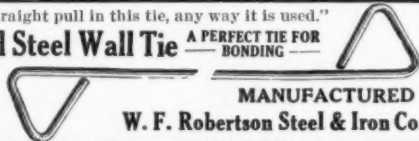
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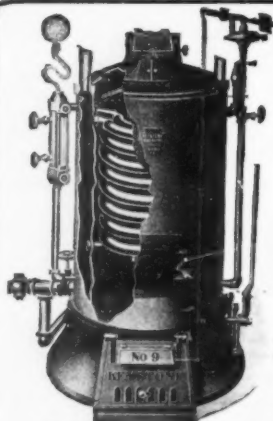
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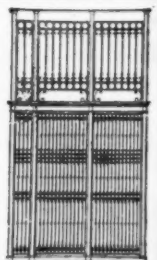
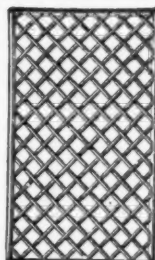
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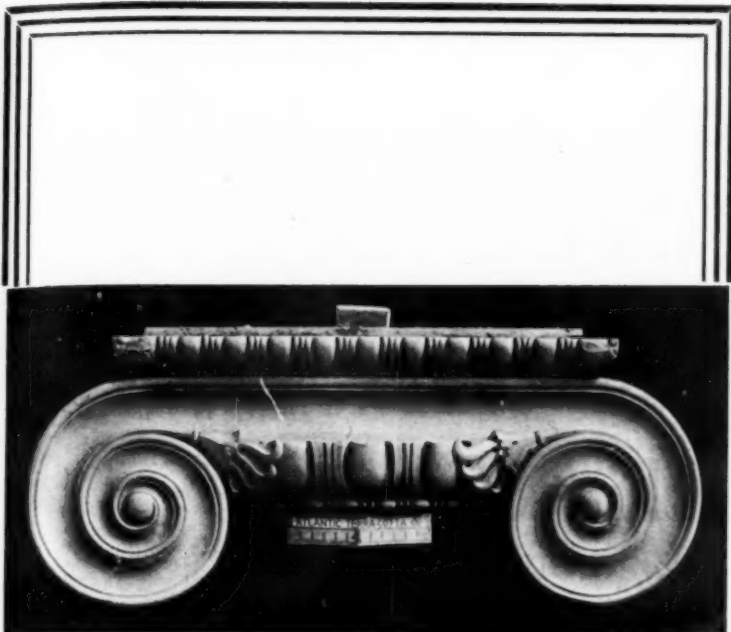
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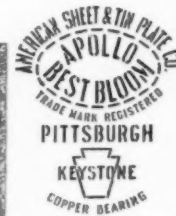
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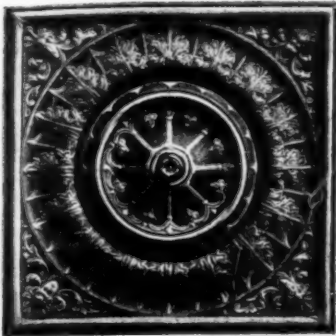
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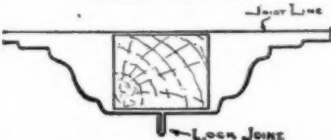
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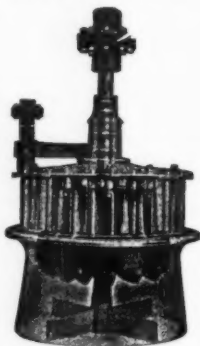
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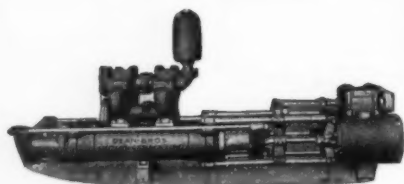
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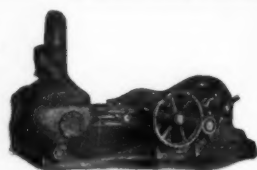


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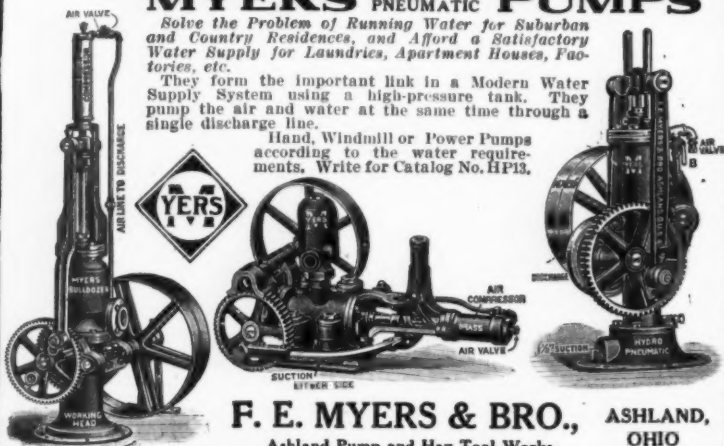
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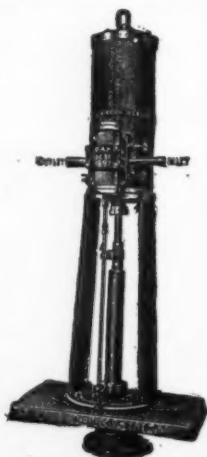
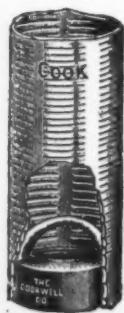
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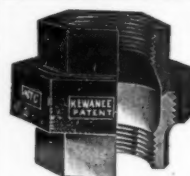
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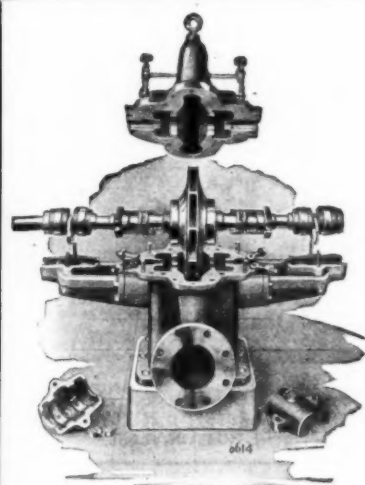
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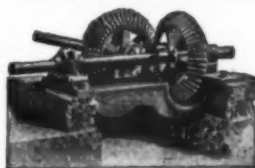
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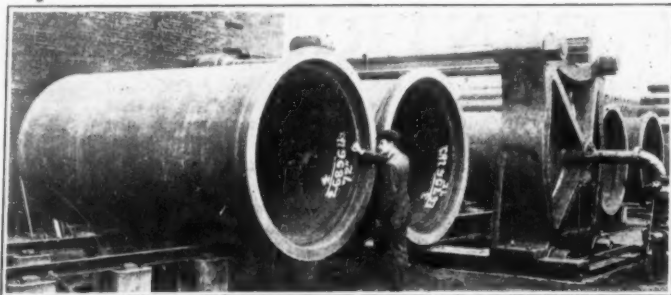
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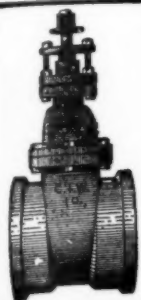
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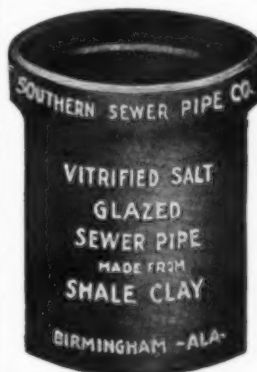
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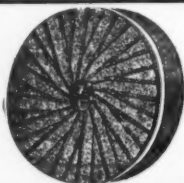
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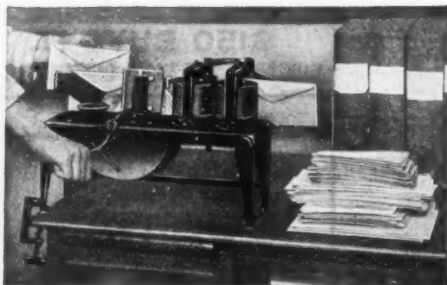
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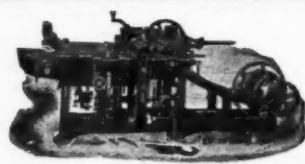
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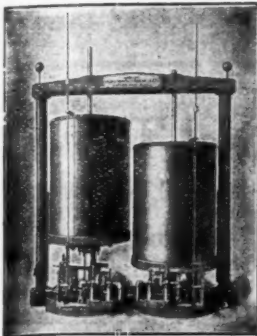
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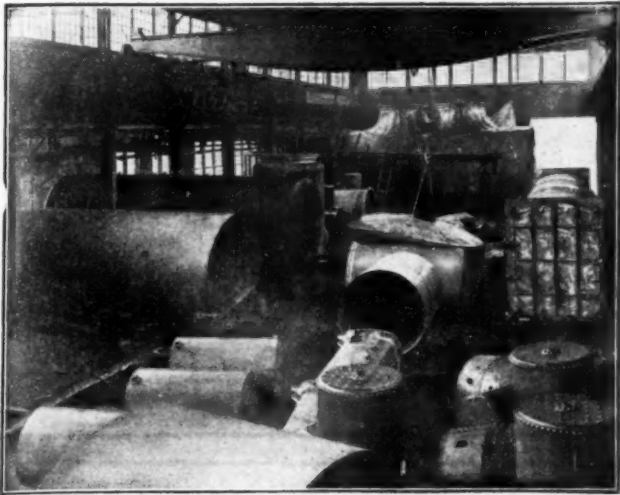
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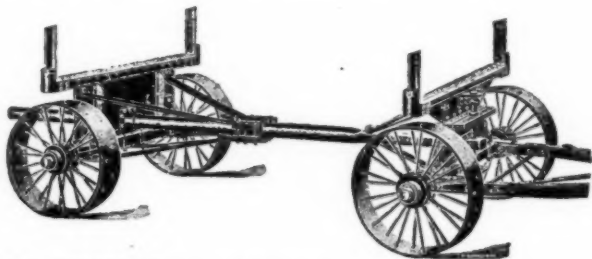
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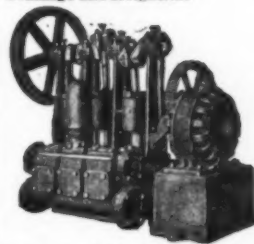
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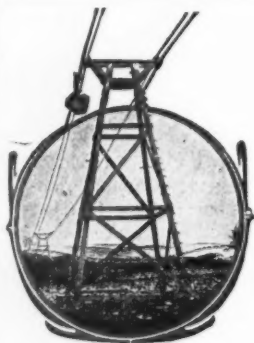
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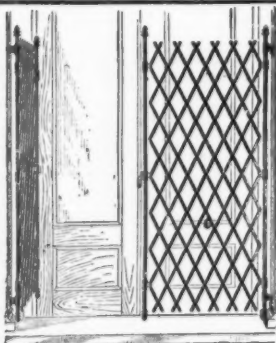
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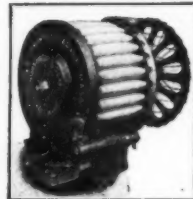


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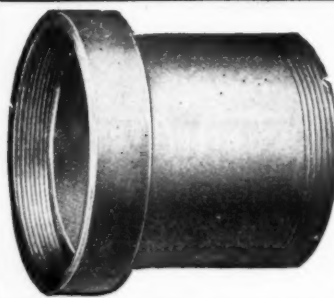
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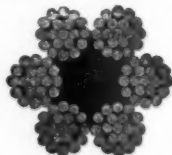
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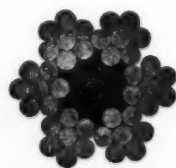


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MANUFACTURERS RECORD

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER

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Welcome

Visitors to the American Road Congress at Atlanta are cordially invited to make the booth of the Manufacturers Record in the main building their headquarters. They will be welcome at all hours. They will find some easy chairs and writing tables at their service, and they can make appointments for business conferences with friends in our office or booth, regardless of whether they are in any way regular readers of the Manufacturers Record or not.

Come in, make yourselves at home and write your letters or discuss business matters with other visitors. The offices and the services of the Manufacturers Record during the meeting are at your command.

AMERICAN IRON AND STEEL INSTITUTE AT BIRMINGHAM.

THE 300 or 400 members of the American Iron and Steel Institute who will meet this week at Birmingham will have opportunity to study one of the most remarkable industrial fields of the country. Their meeting will not have the full effect desired unless it give impetus to the development of the iron and steel industry in the South. The visitors represent an industry in this country which, in primary manufactures alone, has an annual output from blast furnaces, forges, bloomeries, rolling mills and steel works approaching \$1,500,000,000 in value. This output has increased from something less than \$300,000,000 in the past thirty-four years, and is typical of the wonderful progress in American manufacturing in that period. The Birmingham district was a center of the revival of iron-making in the South in the early eighties, and today represents in a marked degree the tendency to diversification in the industry. Nowhere else in the country is there such a juxtaposition of coal, fluxing material and iron ore, and, although at other points, both in the South and elsewhere, some phases of the industry may have developed to a greater extent than in the Birmingham district—there is, for instance, no ship-

building there, as at Newport News or at Baltimore, and the diversification has not approached that of Pittsburgh—the lines of possible advancement have been laid down awaiting a greater volume of needed capital. Opportunity will be given the visitors to study the situation at first hand, the program includes interesting papers by Southern iron-masters, and it is hoped that the outcome of the meeting may ultimately be an income of capital to the Southern field, enabling that section to occupy the place in the iron and steel industry for which its natural resources qualify it. It rests with the people of the South whether or not such capital shall be encouraged to make its productive home in that section.

THE OBSCURED BUT VITAL FACTOR IN THE COTTON SITUATION.

AN important factor in the American cotton situation, perhaps the important factor, that is not generally considered as it should be whenever that situation becomes acute, is the status of the average cotton grower. He is the burden of the rhetoric of politicians of various stripes in cotton-growing States. His necessities, his opportunities and his responsibilities are discussed from many angles by word of mouth or in print. He is charged with doing those things that he ought not to do and with not doing the things that he ought to do. And yet little of the concern expressed for him by men who are not cotton growers and few of the movements inaugurated ostensibly in his behalf involve real purpose for his benefit or an appreciation of his hamperings.

When the talk is of reduction of acreage and coincident raising of home supplies, of holding from the market a portion of the crop to assure better prices for the whole or of organization for the common advantage of all the growers and not for the profit of self-constituted leaders, the bane of so many organizations, there is little thought, if, indeed, definite knowledge, of the helplessness in existing conditions of a great body of the cotton growers sufficiently large in number and sufficiently effective in production to determine the outcome of any cotton situation if they only had a free hand.

How influential this body of growers is and what is its inherent strength are indicated statistically in the accompanying tables as of 1909, the latest year for which authoritative figures of the kind are available.

In that year, when 10,649,268 bales of cotton were grown on 32,043,838 acres of land in seventeen States, there were in eleven Southern States—Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas and Virginia—producing 94.2 per cent. of the total

A Specimen Cotton Crop Exhibit.

States.	Farms. Number.	Acres. Number.	Crop. Bales.
Alabama	224,871	3,730,482	1,129,527
Arkansas	148,311	2,153,222	776,879
Florida	20,677	263,454	65,056
Georgia	242,673	4,883,304	1,992,408
Louisiana	74,373	957,011	268,309
Mississippi	229,697	3,400,210	1,127,156
North Carolina	129,704	1,274,404	665,132
South Carolina	158,167	2,556,467	1,279,866
Tennessee	67,663	787,516	264,562
Texas	316,704	9,930,179	2,455,174
Virginia	5,283	25,147	10,480
Total	1,618,123	29,961,396	10,035,149
United States	1,714,149	32,043,838	10,649,268

crop, 2,491,509 farms or plantations. On 1,618,123, or 64.9 per cent. of these, cotton was raised. That was an average of only 18.5 acres to the farm. The average production of cotton per acre was only

thirty-three-hundredths of a bale, and the average production per farm only 6.20 bales. The greatest average acreage in any one State was 31.4 acres in Texas, which raised 23 per cent. of the country's

Average Production in a Cotton Crop.

States.	Average acres per farm.	Average crop per acre. Bale.	Average crop per farm. Bales.
Alabama	16.6	.30	5.02
Arkansas	14.5	.36	5.10
Florida	12.7	.25	3.15
Georgia	20.1	.41	8.21
Louisiana	12.9	.28	3.61
Mississippi	14.8	.33	4.91
North Carolina	9.8	.52	5.13
South Carolina	16.2	.50	8.09
Tennessee	11.6	.34	3.91
Texas	31.4	.25	7.75
Virginia	4.8	.42	1.99
Total	18.5	.33	6.20
United States	18.7	.33	6.21

crop, though it had one of the lowest average productions per acre—one-quarter of a bale. On the other hand, North Carolina, which had, next to Virginia, the smallest average acreage in cotton farms,

Proportion of Tenants Among Farmers.

States.	(All Farmers.)		(All Tenants.)	
	Total.	Negro.	Total.	Negro.
Alabama	262,901	110,443	158,326	93,309
Arkansas	214,678	63,593	107,266	48,885
Florida	50,016	14,721	13,342	7,322
Georgia	291,027	122,559	190,380	106,738
Louisiana	129,546	54,879	66,697	44,077
Mississippi	274,382	164,737	181,491	139,605
North Carolina	253,725	65,656	107,287	44,139
South Carolina	176,434	96,798	111,221	76,295
Tennessee	246,012	38,308	101,061	27,567
Texas	417,770	69,918	219,575	48,065
Virginia	184,018	48,114	48,729	15,706
Total	2,491,509	849,726	1,305,885	652,238

9.8, averaged fifty-two-hundredths of a bale to the acre—the largest among the eleven States. The largest average crop per farm was 8.21 bales in Georgia.

Ranging in number from 5283 in Virginia to 316,704 in Texas, these cotton farms had an aggregate area of 29,961,396 acres, yielding an average of less than a third of a bale of cotton to the acre and of seven bales to the farm. Of course, these averages must not be allowed to diminish the value of the fact that some plantations had a much larger area than 32 acres and produced 100 bales or more as their crop, and that the yield in some cases may have been more than a bale to the acre, or lessen the significance of the fact that in other cases acreage and yield were below the average. Recognition of such facts is essential to a full comprehension of the economic standing of operators of the farms or plantations. It must be borne in mind that many large tracts of agricultural land in the South, formerly embraced in plantations owned and operated under the direction of one owner, have either been divided into smaller tracts, sold or rented, or have been divided into what are known as tenant farms, with the actual owner of the land living elsewhere, and that of the total 287,275,869 acres of land in the 2,491,509 plantations or farms in the eleven Southern States, only 100,189,849 acres, an average of 43.8 acres per farm, are under cultivation.

Lands thus occupied are held in a number of ways and the operators are in several classes. For the purposes here in view the operators may be divided as owners or managers and tenants, embracing both cash tenants and share tenants. Of the 2,491,509 farmers of all kinds in the eleven Southern States nearly 35 per cent. are negroes. Of the total 52.4 per cent., or 1,305,885, are tenants, and of the tenants

a little less than 50 per cent., or 652,238, are negroes.

But two States, Mississippi and South Carolina, have more negro farmers than white ones, and in both those States negroes largely predominate among the tenant farmers, the negro tenants in Mississippi constituting more than 50 per cent. of all the farmers, and in Alabama, Florida, Georgia, Louisiana and South Carolina constituting more than one-half of the tenants. It is impossible to present the exact figures showing the actual number by classes of the tenants who raise cotton. It is believed, however, that the proportion of these special classes among cotton growers, who form nearly two-thirds of the body of all farmers in the eleven States, are clearly indicated in the figures of all farmers, the relatively wide differences between the total number of farmers and the number of cotton farmers being found in Florida, Tennessee and Virginia, which raise less than 4 per cent. of the cotton of the country and which have among their 480,046 farmers only 93,623 cotton growers.

It is obvious that organization of 1,600,000 farmers of any kind for their own advantage is a difficult matter. There have been wholesale organizations of farmers, but usually the organizations have been largely used to promote uneconomic propositions or have been perverted into machines to further the political ambitions of class demagogues. There have been organizations of cotton growers in the South, but even those which have avoided the general tendency to fly the track have accomplished little.

It is easy to explain this. The men who usually come to the front in formal gatherings of such organizations are hardly representatives of actual cotton growers, however close their relations may be to the growers. Sixty per cent. of the cotton growers are more or less barred from freedom of action, and 40 per cent. of these trammelled ones have hardly been qualified to plan intelligent action in their own behalf. Of the 2,491,569 farmers in the eleven Southern States mentioned, 1,305,885 are tenants and 217,085 are operating mortgaged farms. Of these 1,522,970 not having full freedom of action, 694,455 are negroes. The individuals who really are in the best position to determine any situation in cotton are the men who control in one degree and another the majority of the cotton growers and have considerable influence even with other growers who own absolutely their farms. These influential individuals are such landlords as are unable to find tenants capable of raising anything but cotton, such money-lenders as depend upon crop liens for their security, and such merchants as are accustomed not only to supply, on credit, growers with the materials for making their crops, with food for themselves and with feed for their work animals, but also to take their cotton in settlement of store accounts, making comparatively large profits in both transactions. These three groups, who thrive upon tenants, mortgaged farmers and other growers, are the main obstacles in the way of systematizing cotton growing. They are the ones to be trammelled before a great body of cotton growers can operate for their own good.

A TEXAS VIEW OF NATIONAL PROSPERITY'S NEEDS.

IN reprinting the editorial from the MANUFACTURERS RECORD of October 8, "How American Prosperity Was Halted and How It Can Be Restored," the Daily Times-Herald of Waco, Tex., says:

The Times-Herald believes in reform. But the Times-Herald is persuaded that the only genuine reform comes from the repeal and not from the enactment of law. When it looks over the pages of history it is doubly confirmed in this belief. The charters of liberty, both as to individuals and as to trade, have been merely the sweeping away of accumulated wrongs in legislation. But, despite this obvious truth, based on established fact, we have had in this country during the past two decades an almost continuous agitation in behalf of fresh legislation, much of it calculated to hamper enterprise and to cripple industry. * * * Really, reader, don't you think we have done enough by legislation for the present? Don't you think we ought to permit all lines of business to look about for a season? How in the world is any one of us going to put up a fence if he fears that some agitator is laying his plans to pull it down? It will take us fully fifteen years to digest all the legislation of the past fifteen years. This includes both State and Federal legislation. Much of it is of the hard-boiled-egg variety, but it's not impossible if only the

supply isn't increased. Whatever is done, let it be in the nature of retrenchment—an abolition of useless offices and a reduction in expenses. We have too much machinery, too many spies, too many commissions, too much extravagance; let's turn our attention to these things and give the business of the country a chance to get on its feet.

It is good to see that the newspapers throughout the land are becoming alive to the situation. We have for some years had enough of hard times. Let us begin a campaign now for good times. To all that the Times-Herald says the country might well say, "Amen" and "Amen."

"FIGHT MUST BE WON BY INDIVIDUAL EFFORT."

REFERRING to the cotton situation and to the necessity of withholding cotton from the market, W. B. Thompson & Co. of New Orleans, cotton factors, in their circular under date of October 12 under the above heading, make the following striking statements worthy of very careful consideration:

But are we all to be stamped by this flight of our Western friends? Not so! Let Texas sacrifice its crop if it wants to do so. If they give it all away, the demand of the world, even in its present state of partial eclipse, will not be nearly supplied. The fight is by no means lost because of this defection. The producers of 11,000,000 bales of the present crop still hold the whip in hand if they choose to use it. But if they hope to win, they must fight, not run. And they must themselves do the fighting. They must quit begging the General Government to perform impossible economic miracles in their behalf; they must cease deluding themselves with the hallucination that the State Legislatures will or can, by mere fiat, repeal the law of cause and effect and protect them from the logical consequences of their own acts. Cotton can be valorized at a living figure, but it must be so valorized, not by freak legislation or executive lunacy, but by the courage and good sense of the individual owners of the commodity and his business allies. While your bale of cotton is lying out in the yard exposed to the drenching rain, don't sit with your hands in your lap waiting for the police jury to come along and supply a covering at the public expense, and don't wear out the knees of your last pair of trousers praying God to have pity upon your misfortunes and send clearing skies. Go out and get your bale and drag it under shelter. If you are not able to do it alone, call on a neighbor, or even a passerby, and he will help you. The thing to do is to get the cotton out of the storm, not to merely attract sympathy and commiseration. Don't wait for the rescue party; by your own actions make the rescue unnecessary.

It is time that the voice of the sensible business men of the South should be heard throughout the land in protest against the visionary schemes and the impossible projects to have the State and National Governments do things which are beyond their power to do, and which would be unwise if they could do. More tomfoolery has been suggested in regard to the handling of the cotton crop and how the States or the National Legislatures should limit the acreage to be put in cotton next year, even to the point of forbidding the planting of cotton, or by subterfuge bringing about this condition, than have been put forth before on any subject since the day when the politicians very nearly ruined for many years the financial credit and standing of the South by the equally absurd propositions about free silver. This section has had to bear burdens in this respect such as no other section of this country has had to carry.

The cotton situation is a serious one. The railroad situation is a desperately serious one, and hundreds of millions of dollars have been lost by railroad security holders. The iron situation is a desperate one, and for years past the iron people of the country have been to a large extent losing money, many of them on every ton they produced. The lumber situation is a very hard and trying one, and a very large proportion of the lumber mills of the South, like the naval-stores plants, are shut down because they cannot find a buyer for their product even at less than cost. But these people have not grown hysterical. They have not besought the country to come to their relief by buying their securities, or taking their iron, or their lumber, or their naval stores on a basis of semi-philanthropy at a higher price than the market value. The "buy-a-bale" movement was good when it was projected on the basis of buying a bale of cotton at the market price. It was made economically unsound and destined to failure the moment it took the turn of trying to induce people to buy a bale on a basis either of

philanthropy or of speculation or investment at several cents a pound above the market price.

If the effort had been made to induce the country to invest in cotton at the market price, whatever that might be, it is possible that a very considerable amount of cotton could have been absorbed at a gradually advancing price, but instead of that unintelligent growers were made to believe that the country was going to absorb cotton at 10 cents a pound, or 25 per cent. above the price at which it was being sold. This was an economic fallacy fraught with unfortunate results. The MANUFACTURERS RECORD commended the movement when it was first proposed on the basis of buying at the market price, but it realized the futility of the effort the moment the scheme was launched to try to make people buy a bale of cotton at 10 cents a pound. We would rejoice if this cotton could be sold at 10 cents a pound or at 12 cents a pound, but the folly of trying to force a 10-cent price on the public when producers were selling at much less than that was destined inevitably to react and help to pull the price down instead of lifting it up.

The South must recognize that it has come face to face with a world-wide condition. It must face, and face manfully and courageously, the fact that a large proportion of its cotton crop cannot be sold at present, and must be carried over into next year. The South has faced many trials in the past far harder to bear than this situation. It has met them with courage and conquered them. At the present time it is in danger of becoming hysterical and of losing courage when there is no necessity for either. The situation is a trying one, but every individual and every section and every nation some time in life has to meet trials and difficulties, and is either mastered by them or masters them. The result tells as to whether there is strength of character to master the situation or whether, through lack of stamina, the difficulty becomes the master.

Mr. Thompson is very explicit in his reference to "freak legislation" and to "executive lunacy." Of both the South has during the present emergency displayed an abundant yield, more than matching in extent the size of its cotton crop.

A large number of the cotton growers of the South ought to be in a position to carry a part, and in some cases all, of their crop. This is pre-eminently true of men who have had the good sense to raise their own foodstuffs. There is many a farmer in the South who, with large production of corn and provisions, can pick his cotton and store it away until it suits his convenience to sell it, unvexed by indebtedness against it. This can probably be said of very few growers who have been forced to give all of their time and attention to raising cotton or who have willingly done so. If these men can be induced by this situation to grow their foodstuffs and make their cotton a surplus crop, and this doctrine has been preached and preached for the last forty years, the lesson will ultimately be worth all that it now costs.

It is incumbent upon every landowner who has been encouraging his tenants to raise only cotton, upon every banker who has financed cotton growers, and upon every merchant to decide, and rigidly adhere to that decision, not to assist any farmer during the coming year who will not curtail his cotton production, or who, at least, will not largely increase his production of foodstuffs for man and beast. It is useless to talk about curtailing acreage unless the people who have the power to bring about this curtailment make a large acreage next year an impossibility. This cannot be done by law, and if it could be done by law it would react and do more harm than good. Economic laws must be the final arbiter in matters of this kind, and not man-made laws.

It is well, however, when commanding suggestions that have been made that cotton should be withheld from the market to as large an extent as possible, to insist that Southern growers who are indebted to their factors or their bankers should sell enough cotton, even if at a loss, to meet their indebtedness, or else arrange on an entirely satisfactory basis with their creditors for the carrying of these debts. No man has a right to destroy his reputation for integrity by trying to prevent losses in his business operations. Every man, whether he be farmer or merchant, must sometimes face a condition when the

payment of debts, even at a great sacrifice, is worth far more from every point of view than the withholding of payment because he is unwilling to make sacrifices. On the other hand, the creditor in the South today should to as large an extent as possible take the initiative in protecting his debtor, and should voluntarily assist in the handling of the crop in such a way as to produce the best results. This is not a time for any man selfishly to protect his own interests at the expense of his customers or the community. Upon the general business men, the bankers and the cotton growers of the South today rests the responsibility of saying what shall be the world's future estimate of the stamina of the people of the South when put to a test so severe as that at present. Weakness in handling the situation, or weakness of character in developing hysteria, would for all time to come be injurious to the whole South.

PRODUCE FOOD FIRST, SHOULD BE SOUTH'S RULE.

ANNOUNCEMENT of a plan to sell sugar direct to the consumer, made by the Godchaux Planting Co. of New Orleans, suggests not only one way of relieving the present plight of the sugar-maker of the South, but also provides an object-lesson to producers and consumers applicable to every kind of foodstuff consumed in the South. The Godchaux plan would move a product for which the present market is sluggish and put the sugar in the hands of consumers, in 25 and 100-pound cotton bags, at slightly less than the present market price. While the plan is stated to be merely an experiment and an advertisement, to be followed up by permanent arrangements for marketing through dealers, if a demand is created, with the advantage that the planters will not be under compulsion to sell their product to the large refiners, as it present, it would seem that in the interest both of producer and consumer a perpetuation of the plan would be desirable, and that its extension to take in poultry, truck and dairy and farm products would be advantageous all around.

Properly and intensively cultivated, the millions of immeasurably and incomparably fertile acres of the South could raise enough of every kind of foodstuffs to well-nigh feed the world, and yet the South stands scandalized today by an attitude of mendicancy into which it has been put by misguided friends and others because it finds itself unable to immediately sell its cotton to get money to pay the merchants their bills for the food and things they have consumed. The farmers around every hamlet, town and metropolis of the South could and should supply not only all the foodstuffs they themselves require, but also everything needed in their trading places, but instead of this the farmers frequently buy much of the food their families and their animals eat, and the people in the towns and cities get their butter, eggs, poultry, bacon, vegetables and fruits from places sometimes 1000 to 3000 miles away. Wisconsin butter goes to Georgia and Florida and other Southern States by the carload, and Northern vegetables flood nearly every Southern market. Among Southern States in which the larger cotton crops are raised the amount of money spent for Northern, Eastern and Western foodstuffs almost, if not entirely, equals the sum received for the average cotton crop.

The South can never be the paradise for which the Creator designed it until there is more work done by the head and the hand in the rational utilization of its abounding opportunities. Hard work, and lots of it, are needed at all times, and now as never before in this generation. By "living at home" and supplying communities with all foodstuffs, by the Godchaux plan if other marketing facilities are lacking, the South will be insured against a recurrence of the present embarrassment and humiliation. With cotton a surplus money crop it never could be shifted from an asset to a liability, and no combination of world-wide disturbances could bring a repetition of the much-advertised though largely-exaggerated prostration the cotton States are experiencing today.

Let the Southern farmer raise cotton—enough of it to meet the world's needs, for people must be clothed. But let him also raise things to eat and to

let his neighbor have. People can worry along with scant attire for quite a while, but there can be no compromise as to sustenance, which must be easily and reliably accessible at all times. Food first, clothing afterwards, nature's law, should be the law of the Southern farmer.

NOT GOING TO THE DEVIL.

AS A G. CANDLER, president of the Central Bank & Trust Corporation, of Atlanta, who, as announced in the MANUFACTURERS RECORD last week, has agreed that his institution shall undertake to lend to its customers 6 cents a pound on cotton to any amount needed, has made a speech that ought to be worth more to the South than even his willingness to lend up to \$30,000,000 on customers' cotton. His speech is in line with what the MANUFACTURERS RECORD has for weeks been proclaiming, and that is the necessity of quickening the South to a realization of its inherent strength of character and its ability to overcome adverse conditions without putting itself before the world as a beggar asking for help, or without giving justification for the placards which fill the windows of New York and other places, "Help the South."

In a letter to the editor of the MANUFACTURERS RECORD, Mr. Candler writes:

You have so easily arrived at the real purpose of our plan, to wit: to show stronger financial institutions how easily they may adopt some such plan as ours for relief of the country through their correspondents. To have the endorsement and support of so influential a factor in the country's commerce as yourself is an earnest of ultimate and full success. You have too long been alive to the welfare of the South not to know well in what direction her interests lie. It affords me pleasure to say to you that you are having the most cordial co-operation all over the country, and I confidently believe we are going to do a great deal more good than we believed ourselves able to accomplish when we determined upon the plan as set forth.

Mr. Candler is also entitled to the enthusiastic commendation of the South in his vigorous opposition to the call of a special meeting of the Legislature of Georgia in connection with the cotton situation. In an address before the Georgia Chamber of Commerce, he said:

We have had too many doctors. They have gone to the patient and come away with cigars in their mouths and without doing anything or offering any reasonable suggestions. The result is that the patient is almost in despair, and continued consultations and doctors will only make matters worse.

I am in thorough sympathy with the motives of these various meetings, but they cannot do a great deal of good unless some leader proposes a feasible plan.

Legislation cannot be obtained. I think we ought to have common sense enough to know that we are not going to have any legislation on such a matter. A special meeting of the Legislature to take up this matter would, in my judgment, be a calamity. God forbid that they should meet. About all they would do would be to meet and harangue and adjourn without doing anything definite, and this would only add to the despair of the patient.

Then, too, legislation won't help us. We must quit advertising we are in desperate need, for we are not. If we are in such horrible condition, what would we do if we were at war, or what must have been the condition when the Civil War closed?

We must also stop our outcries against Wall Street. I have never in my life gone into Wall Street with a reasonable business proposition that I did not come out of Wall Street in a better, stronger condition.

I am utterly out of sympathy with those who are howling that the devil has us. He has not taken hold of us, and will not. Everything will work out all right if we will get down to work and quit talking war and hard times, and put more vim into our work than we do when prosperous times are around us.

It is refreshing to read from a man of Mr. Candler's influence and position statements like these. Georgia is to be congratulated that it has a citizen of influence who would regard the calling of a special meeting of the Legislature at present such a calamity that he trusts that the Almighty may prevent it. It is refreshing also to see that Mr. Candler is not a believer in the doctrine which he says is being "howled," "that the Devil has us."

It might be suggested that the Devil never gets anybody but those who are willing to be taken possession of by him. Any man can escape the Devil if he wants to, and if the South wants to escape him, it will be wise for it to stop the present pessimism and instead of marching side by side with the

Devil down to the perdition of business, face the other way and look to the time when the sunrise of prosperity shall bring salvation to all the business interests of this section.

The South is doing itself infinite harm. It is time, as Mr. Candler suggests, that it "should quit advertising that it is in desperate need." It is in need, as most business interests are, but there is no justification in the present situation for the agitation which is filling the land with appeals by politicians who are "playing to the galleries," but who at the same time are making the South stand before the world as a helpless beggar, hat in hand, asking for the world's alms; that this section will go to the dogs unless the National Government protects it. Never was there such a call for "protection" as we are now hearing, and the politicians who are leading in it ought never again to decry "protection."

HE HAS WORKED FOR HIS COUNTRY.

THE resignation of Dr. David T. Day from the United States Geological Survey is a distinct loss to the scientific service of the National Government. Dr. Day, who resigns in order to engage in private practice, has been a frequent and valued contributor during the past twenty years to the columns of the MANUFACTURERS RECORD, and is known best, perhaps, to the general public as an expert in the petroleum field, in which he has largely specialized for the survey in recent years. But anyone who has noted the wonderful increase in usefulness to the public of the survey since Dr. Day began his work for it thirty-one years ago, and, as contributing thereto, the marked success of mineral and metallurgical exhibits under his care at Chicago in 1893, Atlanta in 1896, Paris in 1900, Buffalo in 1901 and St. Louis in 1904, and at other expositions, understands that his abilities and energies have been confined to no narrow range, but have left a deep impress upon many phases of the geological branch of the Government service. Few persons, perhaps, know that while still at the Johns Hopkins University working for his degree of Doctor of Philosophy David T. Day was a reporter for a Baltimore newspaper. The newspaper instincts there cultivated have been given wider scope since then, and to that fact may be justly credited much of the standing today of the United States Geological Survey in popular favor.

ADVERTISE YOUR ACTIVITIES.

ALL over the South, as well as throughout the country generally, there are industries running full time to take care of orders growing out of the war. There were nearly 250,000 more spindles at work in the South in September, 1914, than in September of last year, the figures being, according to the United States Department of Commerce, 12,257,006 for this year as against 12,009,006 for September, 1913.

Some cotton mills, woolen mills, steel mills and others are busy with various products required for the use of the warring nations, and some industries, notably those manufacturing glass, have been forced to unusual activity by the shutting down of the industries abroad.

The packers and the manufacturers of foodstuffs of all kinds are reported so busy that visitors to the North and West declare there were no evidences at all of a war-time derangement of trade.

The South can raise foodstuffs and livestock, and can find a ready, profitable market, locally or abroad, for all that may be raised.

Immediate adjustment of the business of the world cannot be obtained, of course, and individual economy and business prudence are imperatively required. But much business must be done by the industries of the United States, and the South must do its share.

The liveliest and the most energetic will get the bulk of this business, as such do at any and all times.

Therefore, be a salesman in spirit. No man can be a salesman and a pessimist at the same time. Every expression from every Southern man and every Southern community should be vibrant with courage, determination, hope. There are some blotches here

and there, to be sure, but quit making a public exhibition of the sores. Show the sound places. Advertise your activities.

THE COTTON MOVEMENT.

SUGGESTIVE of the situation in American cotton is the fact that with the movement into sight during eighty-four days of the present season of 2,000,000 bales less than in the same period last year, the stocks of cotton at the United States ports and at twenty-nine principal interior towns were on last Friday 57,331 bales more. The season started with 339,268 bales in stock at the ports and interior towns left over from the last crop. That was an increase over the status of August 1, 1913, of 52,252 bales. Since then 2,103,308 bales have been brought into sight, a decrease under the same period in 1913 of 2,069,350 bales. The exports have been 397,475 bales, a decrease of 1,682,068 bales; the takings by Northern spinners, 342,358 bales, a decrease of 213,928 bales, and the takings by Southern spinners have been 444,616 bales, a decrease of 178,743 bales, and 292 bales have been burnt. That leaves 1,257,825 bales in stock at the ports and interior towns, an increase of 57,331 bales.

GRANITE TEXAS GOES TO CONNECTICUT FOR GRANITE.

THERE is probably no other State in the Union more liberally endowed with vast granite resources than Texas. That State has an extent and variety of granite that can never be fully understood by anyone who has not for himself seen its great granite deposits, noted their extent and the amazing variety and beauty of these granites. And yet the big Union Terminal Station to be built at Dallas is to have granite from New London, Conn. Mr. J. W. Thompson, the general contractor, writing from his office in the Boatmen's Bank Building, St. Louis, states that the granite subcontract has been let to a New London, Conn., concern, and adds that the reason was on account of the color and quality of the samples submitted with bids. Texas granite men may have failed to submit samples which matched in color and quality those of the New England concern, but the MANUFACTURERS RECORD ventures the assertion that in color, variety and quality Texas has granites that surpass anything in New England. The financial interests back of this Terminal ought to have endeavored to find a way to use Texas granites in such a structure and thus have aided in the development of the granite interests of the State. It is to be regretted that a great structure such as the Union Terminal at Dallas, in a State of such limitless granite resources as Texas, should have to draw on far-away New England for its granite.

A COUNTRY BANKER'S VIEW ON COTTON

MR. H. L. McELDERRY, a banker of Talladega, Ala., familiar with the various problems relating to cotton growing and the lending of money on cotton, in a letter to the New York Herald takes the ground that the present situation will give the small white farmer of the South his opportunity, as he uses the labor of his own family in producing cotton. Mr. McElderry says of this small white farmer:

He will hold the bulk of this year's crop of cotton, and he will not produce cotton and sell it below cost of production when he can raise corn, oats and other feed crops.

He also says that while the present situation hits the merchants who have advanced on cotton to the growers, and large landowners who have endorsed for their tenants, the country banker will now lend money only to those farmers who make their own supplies, and that the small white farmer is the man who will be most benefited. And to this he adds a suggestion to cotton-mill men worthy of consideration. It is this:

My advice to every mill man is to lay in a two years' supply of cotton at present prices. In this he will find his bank ready to help him.



VIEW OF LIMESTONE PLANT OF THE McDONOUGH ORE & MINING CO., GATE CITY, ALA.

The McDonough Limestone Quarry.

By A. H. SAWYER, Mining Engineer, Birmingham, Ala.

The McDonough limestone quarry, recently developed by the McDonough Ore & Mining Co., is situated at Gate City, just outside of the north boundary of Birmingham. The limestone formation at this point covers about 100 acres, and ranges from 200 to 350 feet in thickness. The main quarry at present is at the top of the hill. The floor is about three acres in extent, and the walls about 90 feet in height. The situation is favorable to a low cost of production, as there is almost no overburden to be removed, the drainage is natural and the railroad grades are in favor of the load from the quarry to the tippie. An interesting feature is the situation of the quarry with relation to the railroads. At Gate City is one of the few gaps through which the transportation lines enter Birmingham from the north. It is, therefore, possible to deliver material from the bins direct to the tracks of the Louisville & Nashville, Alabama Great Southern, Central of Georgia, Southern, Seaboard and Birmingham Railway, Light & Power companies' tracks, and also to the county highway. With these seven outlets for the product, the transportation facilities are almost ideal.

The limestone here quarried is from the Chickamauga (Pelham) limestone formation. This was deposited on the eroded surface of the Knox dolomite, and is consequently of varying thickness, ranging from 200 to about 350 feet at this point.

Air is supplied to the drills by a 14x9-inch, 12-inch, B2 Ingersoll-Rand air compressor, driven by a 75-horse-power motor. This has a displacement of 446 cubic feet of free air per minute at 210 R. P. M.

The rock is loaded by hand into three-ton tram cars. The tracks to the face are laid out in a fan shape, making it possible to load several cars at once. They are then made up in trains of from 7 to 10 cars and hauled by a 12-ton "dinky" locomotive over a 42-inch gauge track to the tippie.

The tippie is approached by a trestle about 200 feet long, on which are laid three tracks, 6 feet 6 inches center to center. One outer track leads to a No. 10 Austin gyratory crusher, the middle track is for the return of the empty cars while the third leads to the rip-rap bin; the grades on the incoming tracks are 1.5 per cent. in favor of the loads. The cars are dumped singly in a balanced tippie. The crusher is driven by a 150-horse-power Allis-Chalmers motor.

After passing through the crusher the rock passes over two 22-foot by 4-inch shaking screens, driven by a 10-horse-power motor. The slope of these screens is 2½ inches per foot. The fines are passed through a Williams pulverizer, have a capacity of 150 tons per day and driven by a 75-horse-power Fairbanks-Morse motor.

The smaller products are conveyed by belts, driven

by a 25-horse-power motor, to the storage bins. From these bins it is loaded into a standard-gauge 10-ton car and transported to bins over the tracks of the various railroads mentioned.

As considerable time is consumed in lowering and hauling this car, it is to be replaced by a 30-inch conveyor belt fitted with trippers over the bins. This belt will be 615 feet long center to center of pulleys.

The limestone is of a light gray or pale blue color. The texture of the strata differs, granular and amorphous layers of varying thickness alternating, the thickness ranging from two feet to a few inches.

The quarry face worked is about 200 feet long and 20 feet high. The bench is drilled with holes located about 10 feet back from the face and from 8 to 10 feet apart. For this work, two 3½-inch air drills are used, the steel being 1¼-inch hexagonal. These holes are drilled from 20 to 30 feet in depth. A round consists of from 15 to 20 holes, and is shot at one time with electric exploders. The powder used is No. 2LF Aetna, 1¼ inches diameter and 40 per cent. nitroglycerine.

Five products are made at the plant: Jetty stone, from 700 to 3000 pounds; riprap, from 10 to 100 pounds; fluxing stone, 2 inches down, free from dust; concrete stone, 1¼ inches down, free from dust, and agricultural stone or dust.

The company is advertising the agricultural stone extensively, claiming that it not only neutralizes the acidity of soil, but that it also supplies the element calcium to the growing plant.

Building a Tar Products Plant.

About January 1 the American Tar Products Co., Chicago, expects to complete its Birmingham plant for manufacturing tar products, contracts having been awarded for construction and equipment. This company is also building tar refineries at St. Louis and Youngstown, besides planning to build others at Buffalo and other cities. It has import, storage and distributing stations at New York and New Orleans, with connections for England and Belgium. The corporation was chartered with \$5,000,000 capital stock and acquired the business of the Anglo-American Tar Products Co. of Louisville, the officers including the following: Chairman of directors, A. T. Hert, president of the American Creosoting Co. and the Federal Creosoting Co. of Louisville; president, S. H. Bingham; secretary-treasurer, Thos. B. Taylor; both of Chicago.

The annual meeting of the National Association of Chair Manufacturers will be held at Asheville, N. C., November 12-13.

Banking and the Larger Citizenship*

By EDWARD K. GRAHAM, President of the University of North Carolina.

In speaking on the general subject "Business and the Larger Citizenship" in a program made up of deliberately specific topics, I would not be accused of purposeless generalities or idealism that cannot be made to work. The subject may not seem as distinctly practical as good roads, good soil, good schools, and yet in thinking as specifically as I can about roads, schools, and even churches that are good, I find that no amount of thinking and talking by public road experts and soil experts and teachers will produce the results we all desire, and unless, along with the specialist knowledge and service we bring in our line, you bring the knowledge and service of yours. I mean that we cannot have good public roads and good public schools unless, in addition to good engineering and good teaching, we have good public banking and finance. It is to make a simple point in regard to what good finance is, whether it is practical to have it, and what we can do to further it, that I shall briefly address myself. No question can be of more practical and vital importance than this question of the relation of business and banking to the public welfare, and particularly to the welfare of the farming public.

The view is current that banking men and business men have no relation except antagonism to the higher and nobler activities of men. I was reading a day or two ago a sermon by a minister of national reputation, and a man of great public spirit, in which this ground was eloquently taken. He reviewed the "awful record of industrial accidents," the ruthless fraud, chicanery, corruption of politics and government by business, the outright robbery honored in the business world, the destruction of our natural resources on which the nation of the future must live, and he vehemently declared that the only law of business is brute force and the survival of the craftiest. His conclusion from what he had observed in his work is that business is bad in essence and its standards wholly bad.

And this view, by constant repetition in pulpit and forum and (up to a few years ago) in the popular magazines, convinced even men whose occupation is business that they are a necessary evil in a Christian republic. A good man, they were forced to feel, may be a good man after hours, or on legal holidays, or after he has retired from business. But business is—business. No other word expresses its isolation, its lawlessness, its unrelatedness.

But the typical business man and bank man (who sits at the center of this alleged game of wealth versus commonwealth) cannot quite believe that this is the whole truth or even a part of the real truth. Nobody sees so clearly as he that selfishness and greed, strong everywhere that men live and work, are fiercest in business, but he knows that they are not business. He acknowledges the power of self-interest and the fierce law of the survival of the crafty; but he knows that it is not the only law, or the great law, and that we are rapidly discovering the higher law, even though its standards and demands are not yet quite understood. He looks at the work of his hands and brain—at his factory, his store, his trust company—and it seems to have a place in God's scheme of things. And he looks over this vast country, with its giant concerns and institutions of industry and trade—the incarnate expression of the new "anti-feudal power of commerce"—and it seems, in its work for universal peace, its extension of the suffrage, religious toleration and diffusion of material well-being, that its contributions to the world's welfare give it a high and noble place in God's scheme of civilization.

He looks about him at the successful men in business, and without analyzing their good qualities, they seem on the whole to measure up to the men in other callings. And more than all of this, whether he achieves the height to which his business calls him or not, the serious business man knows that in his business there is a height that he can spend the best that he has in him in attaining. Often blindly, but with flashes of deeper vision, he feels the thrill of the Creator, and he knows that he, too, is a coworker with all good men in the building of a Christian Commonwealth. He feels that business men who wreck a railway system through financial manipulation are as surely traitors to the whole public

as Tweed was or Benedict Arnold; and he feels also that the men who built up the Pennsylvania system, the carrier of the civilization of a people, are quite as worthy workers in the kingdom of righteousness as the artist who designed plans for its beautiful terminus.

Business is business; but it is also life—an essential part of the life of the individual man and an essential part of the life of the nation. What we are coming to see is that good business, like all other good human activities, has two characteristic marks: It must be a good job in itself and it must be done in accord with the standards of the nation of which it is a part. The first is a question of individual freedom and efficiency, the second is a question of responsibility and brotherhood. Reconciling their contradictions in a practical standard of Christian democracy is the task of the civilization that we are building. In science, in art, in government our practice conforms to our theory with sufficient clearness to be recognized by all men. No scientist, no artist, no statesman, could fail to hold his genius and his profession, in large part, as public property. Legitimate government by whomever administered is government administered in the interest of the whole body politic—and this standard is coming to be and will be the practical standard of good business.

It is a difficult doctrine, but it is the very thing that is happening before our eyes—this saturation of the standards of business and the uses and processes of business with the national standard. Business responsibility, business self-restraint and co-operation, to the man who really sees, are facts far more significant in present America than ruthless selfishness, greed and the survival of the craftiest; and the steady progress we are making in a truly democratic interpretation of business is one of the most significant facts in present world history.

To the question how we achieved the progress we have made, and how we are to achieve the even more difficult tasks ahead, there is no specific answer. It will not be through legislative panaceas swallowed by Congress, and the people suddenly made whole. The lash of legislation cures no business ills, though it may serve, as it does elsewhere, to compel attention to the higher law of self-restraint. Enlightened self-interest has played and will continue to play a large part. But it will be through the same slow and difficult process of self-education by which we learned and are learning self-government—through realizing more clearly what we are working for. It is not through restricting the doctrine that business is business, but enlarging it to the view that business is life. We are learning that one may co-operate not only with a single partner, and a group of partners, and a group of thousands of dividend sharers, but with ten thousand workmen and their families, and that we may extend that vision of partnership to the whole community and its wealth, health and happiness. This insight comes not from conversion to altruistic philanthropy, nor from an outburst of emotional patriotism, but through a fuller knowledge of the facts of public welfare, and so to a truer conception of our business concerns and our banking institutions as arteries through which the life of the community flows, and our bank men as public men and ministers of the public welfare as truly statesmen, teachers or preachers. And when we know fully and exactly the economic facts about the public welfare, the projecting power of our sympathy will be vastly increased.

Perhaps I can make this clearer by the case of the Banker Who Discovered An Open Road. He was a normal sort of person, successful and busy, and he lived after the fashion of his kind. He took pride in his town, and he knew a few things about it; its rapid growth in population, its fine main streets, its high tax rate, its leading industries. The air of prosperity that it wore was a daily delight to him. What he cared most about, of course, was his bank. He had built it up and put his life into it. It had grown as the town had grown, and now it lifted its head proudly to a view of all the wide country round about that it served and was served by. He knew every detail of its business, and he loved all of it, down to the fixtures and the bronze plate in the entry. He had no theories except that he agreed with Vice-President Marshall in the doctrine of the "clean door step," i. e., he believed that it was his duty

to keep his own door step clean, and that that was enough. He did his own job well, and the question of whether in doing it well he helped or hindered others in doing their jobs well he considered their concern and not his. As to what doing a job well was he should have referred you to the bank statement. He was not concerned with public questions except as they openly touched his interest or his bank's interest, and he took some pride in the fact that he was not an "uplifter." The good-roads question to him was a matter of the asphalt avenue that led from his clean bank steps to the porte cochere of his home. It went on by, of course, as roads do, but it was not in his knowledge as to how good or how bad it was after it was lost in the blue haze of the hill beyond.

Then in the course of business a simple thing happened. He acquired a farm nine miles out on the road. He became interested in it and interested in making a good job of it, and interested in the tenant and his family, through whom he was to make a good job of it. He found that though you needed good roads, good schools, good churches, in your farming community in order to get a good job done there and keep good people there, it was not sheer stupidity and desire for ignorance and unwholesome, unattractive living that kept the people from getting them. He studied the census returns, and found that although the people produced a great deal of farm wealth, very little of it was economic surplus out of which communities can vote taxes for roads and schools; that they were conducting a business of marketing without a knowledge of marketing that required co-operation without a medium of co-operating; that they were attempting on a faulty, unorganized credit system to make a profit on a business that between the bank and the store required 12 to 20 per cent. interest. Gradually it came to him that the job at the bank and the job at the farm were parts of the same job precisely, and that both were vital organs in the same healthful or unhealthful community life. The bank was no longer an isolated enterprise, but in its being at the heart of the community's material affairs, vitally affected every public activity.

What he discovered through learning some facts of public welfare was not that he had before been a bad man with a bad business, but that his job was a vastly bigger and more inspiring job than he had understood. He knew what it was to be a bank man; he discovered what it was to be a man in the bank. He knew that the public road was a satisfactory way down town and back; he found that the same road was an open door to the end of the world. He found that what the standards of his country asked of him was not that he sacrifice himself and his business in sentimental service, but that he liberate himself and it through exercising freely the privileges of the larger citizenship through creating a more abundant life in the community of which his personal genius was a part.

Because we believe that knowing about the facts of our whole community life is the first step in dealing fairly and generously with them, we have instituted in North Carolina a State-wide campaign for arousing non-partisan interest in the State of the public welfare. The first step in this campaign is a Community-Service Week, decreed a few days ago by proclamation of the Governor, to be celebrated all over the State by all classes of citizens the first three days in December. The first of these days is a "Public Roads and Grounds Building Day," on which the men and women and young people of each town, township or school district will meet according to plan and work together in one of three forms of actual physical service to the community: (1) in making more worthy and creditable streets and roads; (2) in improving the exterior and interior of public buildings; (3) in beautifying school grounds, cemeteries, parks and planting trees, etc., along the streets, roadsides and private grounds. The second day is "School and Neighborhood Improvement Day," with the neighborhood served by the school as the unit, and on this day meetings will be held in the schoolhouses to discuss community conditions, ways for improving social life, economic and health conditions, and local committees named to prosecute plans for carrying out the ideas. The third day is "County Progress Day," on which a great public meeting shall be held at each county-seat in the State to discuss the needs and possibilities of the county in the light of comparisons made with the conditions ten years before, and with conditions in other counties. Careful and detailed programs for each of these days, with abundant and specific in-

*An address before the American Bankers' Association.

formation, have been prepared in the form of a civic handbook by a central committee, a plan of organization for each county outlined in the fashion of organizing a political campaign, a paid secretary employed to conduct the campaign from the State capital.

At the State University we are putting this idea of local applied economics and civics directly into the curriculum and student activities. Our students come from every county in the State. These are organized into county clubs, and these clubs are federated into a State club, in which the studies that the country clubs made of local conditions are compared with each other and set over against the conditions in other States. These studies are based on a syllabus prepared by Prof. E. C. Branson, who gives his whole time to this work, summing up county conditions from investigations of population, wealth, domestic animals, co-operative enterprises, public highways, law and order, recreations, rural credit, churches.

We believe that in a democratic Commonwealth such as ours, no matter what our method of approach—whether through banking, education, manufacturing, farming, a primary condition in promoting the sort of progress that we are all at heart agreed on wanting is a more thorough knowledge of what the facts are. With this will come freer and less prejudiced discussion, a deeper and truer understanding of the principles underlying the facts, and a practice that will accord to a more generous and human interpretation of them. Our great lesson, bitterly hard to learn, is that these streets, and store, and fields, and banks, and factories, and schoolhouses, and churches, and all the rest are all but parts of a great common purpose, and that the "Thy Will" for which we daily pray will be done here and now or nowhere; and that banking, agriculture, education, freedom and life itself are but instruments for finding the common God in the common good and making His will prevail.

North Carolina Sand Hill Section.

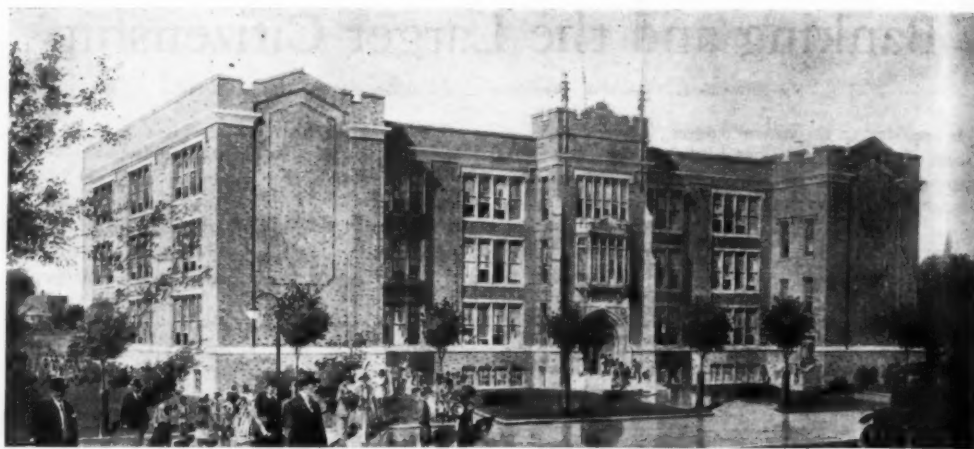
Some months ago was organized the Sand Hill Board of Trade, with Roger A. Derby, president, and with headquarters at Aberdeen, for the purpose of assembling for co-operative endeavor efforts to make the most of the many opportunities in the Sand Hill region of Eastern North Carolina, in which lie Southern Pines, Pinehurst, Aberdeen, Pine Bluff, Cameron, Carthage, Samarand, Eagle Springs, Vass, Lakeview, West End, Jackson Springs, Norman, Ellerbe, Marston and Keyser. One of the products of this co-operation is a booklet issued by the Sand Hill Board of Trade presenting from the verified results of experience the opportunities of the section for diversified farming. The booklet is profusely illustrated with pictures of growing crops of various kinds, of typical homes and of the towns within the Sand Hill region.

In reply to an inquiry about present conditions in the Sand Hill region, President Roger A. Derby of the Board of Trade writes to the MANUFACTURERS RECORD:

"The cotton planters are blue, but I don't think the section is. We had over \$200,000 brought in here this year in fruit alone. The tobacco men are reasonably happy. Beef cattle feeders are going to get a full value for their cottonseed fed in the form of meal and hulls to cattle bought cheap last summer in the mountains, and the Board of Trade has been able to secure \$100,000 to loan on cotton stored in its warehouses, of which nine are now in operation. So we have made a success of diversification of crops and co-operation of effort, and this storm isn't going to hurt us very badly. I believe this is the way out for the South, and wish every community were learning the lessons we are."

For a Little Rock Tobacco Market.

J. R. Frazier, George W. Pardee, Charles J. Griffith, Sam Henderson and C. C. Kavanaugh, a special committee of the Board of Trade of Little Rock, Ark., Geo. R. Brown, secretary, are in consultation with R. M. Holden of Durham, N. C., over plans for the encouragement of tobacco growing in Arkansas, and the creation at Little Rock of the leaf tobacco market that will attract buyers from other parts of the country and from the Orient. Preliminary meetings have already been held, and there will be another one at Little Rock next week.



BINFORD SCHOOL, RICHMOND, VA.

Binford School, Richmond.

The Binford School building, in course of erection at Richmond, Va., presents some novel details in its design and construction. It will embrace departments for elementary and junior high-school pupils. The structure will be 112x220 feet, three stories, with a playground on the roof and open-air gymnasium on a level with the third story above the auditorium. A striking feature will be the elimination of stairway, access to the upper floors being by means of inclined planes or ramps. Its construction is of reinforced concrete and steel, with exterior of white pressed brick, trimmed with Indiana limestone, and promenade tile roof, the style being Collegiate Gothic. The unilateral principle of lighting has been employed in all rooms. The main auditorium will seat 1000, and is arranged with gallery and stage. Other rooms include administration, library, hospital, toilets, play, domestic science and manual training. Shower baths are also provided. Heating and ventilating are provided by a motor-driven fan, blowing air over battery of furnaces and distributing same, the foul air being taken through wardrobes, aerating clothing of pupils, and exhausted into stacks carrying it above the roof. The building will cost \$140,000, exclusive of heating, the general construction contract having been let to A. M. Walkup Company, Inc., and heating contract to the American Heating & Ventilating Co., both of Richmond. Contract for reinforcing steel was let to Trussed Concrete Steel Co., Youngstown, O.; granite, Richmond Granite Co.; sheet metal, N. W. Martin & Bro.; electric conduits and wiring, Martin & Myers; plumbing, E. R. Harris, all of Richmond; promenade tile roofing, A. Schwoerer & Sons; slate work and blackboards, E. J. Johnson; partition block, U. S. Gypsum Co., all of New York; limestone, Hoadley Stone Co., Bloomington, Ind.; structural steel and architectural iron, Dietrich Bros., Baltimore; mill work, Roach & Musser Sash & Door Co., Muscatine, Iowa; Marble and terrazzo, Ray & Marus Company, Chattanooga; composition flooring, Philadelphia Mineral Flooring Co., Philadelphia. The structure was designed by Chas. M. Robinson of Richmond, and is being erected under the supervision of his office. An accompanying illustration presents a view of the building as it will appear completed.

For Tourists in Florida.

The firm of Ludden & Bates of Jacksonville are carrying in the daily papers of that city an advertisement suggesting that every effort be made to give the tourists the best impressions possible. It says:

"Florida is certain to have the greatest crop of tourists ever. They cannot go to Europe, and most globe-trotters get away from the rigors of winter whenever they can. They are certain to bring something with them, and they spend money within their means while here, in which we all participate.

"Every dollar brought in from other sections will percolate through a section in the manner of an endless chain of profit from it directly and indirectly. It is nothing but shrewd business on the part of the best of us to offer every inducement for a tremendous influx of tourists, and assure them that they will be fairly and

honestly treated—given the greatest value of its kind that can be had anywhere on the map.

"Many of them are coming to Florida for their first time, and first impressions are the most lasting in grownups as well as with children. If well treated, they are going back to their homes boosting Florida to such an extent and force that thousands of dollars could not purchase otherwise. Next year, perhaps, they will come as investors at least, if not for permanent settlement with us, and Florida has room for several millions of them without crowding anyone. Charge them a reasonable price for accommodations, sell them lands at a fair and equitable valuation; acre for acre, Florida offers more than any State in the Union for all-the-year-round living, anyway."

TO BUILD HARDWARE PLANT.

Project of Northern and Western Manufacturers for North Carolina.

[Special Correspondence Manufacturers Record.]

Salisbury, N. C., October 24.

A number of hardware manufacturers of Pennsylvania, Ohio, Indiana, Illinois and Wisconsin that sell in the South have combined and are expecting to erect a plant near Norwood, N. C. They have bought 500 acres, and propose to put in their own plant on this tract and encourage other manufacturers to locate there. Power will be purchased from local producers of commercial power or the company may develop nearby water-power. The new industrial town is to be called Energy, and lies contiguous to the Norfolk & Southern Railroad, Winston-Salem Southbound and the Southern. Eldon L. Hayes, an attorney of Cincinnati, is on the ground taking over the property, and will manage the enterprise in the initial stage.

Reclaiming 4000 Acres of Land.

An expenditure of \$154,454 has been about completed for the Marion County Drainage District in the central-eastern part of Marion county, Missouri, across the Mississippi River from Quincy, Ill. This district embraces 4000 acres of land especially suitable for the production of corn, wheat, garden truck and grasses. Assessed benefits of \$268,617 have been confirmed against the lands, of which 90 per cent. is now in cultivation. Most of the drainage is effected by about 15 miles of 4 to 24-inch tiling. The pumphouse contains two 30-inch centrifugal pumps built by the American Well Works of Aurora, Ill., and motors built by the General Electric Co. of Schenectady, N. Y. The Edmund T. Perkins Engineering Co. of Chicago was the engineer for the district.

Max Oppenheimer, 6 and 7 Kinghorn street, London, England, writes to the MANUFACTURERS RECORD as follows:

"I am chiefly interested in the sole representation of important, or at least efficient, manufacturing firms in the fancy metal goods and household goods trades; also in small ware and haberdashery lines of different descriptions. I am also well up in the introduction of patent and proprietary lines."

Present Railroad and Business Conditions As the Inevitable Outcome of False Teachings

In view of the present situation in railroad affairs and in general business conditions, entirely separate and distinct from the influence of the war, conditions which indeed existed prior to the war movement, it has seemed that it might be wise to republish, not in the spirit of saying "I told you so," but merely with the view of pointing out that the situation existing today was easily foreseen years ago and could have been avoided if our country had disregarded the agitation against business interests which swept over the land, and which has not yet spent its full force. On October 31, 1907, seven years ago, referring to the condition then prevailing, the MANUFACTURERS RECORD said:

"The country was suffering to some extent from cramp colic, but in the natural order of things this would have passed away. The learned surgeons diagnosed it as appendicitis, and have been operating rather heroically, if disastrously to the patient. In the language of surgery they can say that 'it was a beautiful operation,' but the common sense of the American people knows that it was not a successful one. The recovery of the patient has not been due to the skill of the surgeon who made the false diagnosis and operated for the disease which did not exist, but the recovery is due to the magnificent physical condition which has enabled the country to sustain the shock and so regain its wonted strength.

"Every dollar lost to the Southern cotton-grower or the Western wheat-producer in the decline forced upon the country through the present financial situation, every dollar lost through the depreciation in securities through the wiping out of values, every laborer out of employment is a tribute to the power for evil of the demagogic agitation from press and pulpit and public men during the last 10 years.

"As the farmer sees his cotton or his wheat decline in price through the inability of banks to give him the needed financial assistance, as workmen here and there are already looking for jobs while for the last five or ten years the jobs have been looking for the men, there will be brought home to them with intense force that the agitators throughout the land who have been fighting railroads and corporations instead of proving a blessing have proven a great curse. Every public man who has taken part in this active agitation, who has stirred up hate against railroads, who has undertaken to cure imaginary appendicitis by the knife when the colic might have been cured by less drastic means, is responsible to the extent of his influence for the conditions which we now face.

"Possibly the country needed such a lesson as this to teach laborers that faithfulness and efficiency are essential in the long run to success in work and in character. Possibly it was needed in order to bring us back to a realization of the fact that you cannot injure one member without the whole body suffering. You cannot fight the railroad or the great corporation without the day laborer and the clerk and the mechanic and all others sharing in the suffering. Possibly it was needed to bring us back to the point of realizing that the demagogue, whether he be demagogic because he is a knave or because he is a fool, has for some years been sowing hatred broadcast and preaching the gospel of hate instead of the gospel of love."

In a lengthy discussion of the railroad situation published in pamphlet form by the MANUFACTURERS RECORD in 1908, it was said:

"Broadly speaking, the American people have bankrupted the railroad system of the country. Before the panic the roads were bankrupt in facilities, the American people having developed business more rapidly than the railroads could provide tracks and rolling stock. Since the panic they have been bankrupt in finances for lack of business. Persistent agitation made the public believe that railroads were highway robbers; that their managers were spending their time watching the Wall Street tickers of stock speculation instead of attending to the details of operation, and that individual and community prosperity could be built upon the wreck and ruin of railroads. * * * Any intelligent

man who cared to look into the situation any time during 1906 and 1907 could see that every law passed for the restriction of railroad operations, that every effort made through legislation, National or State, to antagonize railroads or to reduce their rates, was necessarily fatal to the prosperity of the country. It did not require any great genius to see the conditions which have been outlined. It was as clear as daylight; but there were only two ways possible for meeting the situation. One was to encourage, by the broadest and most liberal co-operation on the part of National and State governments and of individual citizens, the investment of money in railroads in order that not hundreds of millions, but tens of hundreds of millions, might be poured as rapidly as possible into the enlargement of our transportation facilities. Three years ago the writer in an elaborate article pointed out that it would require at least \$5,000,000,000 to expand our railroad facilities sufficient to meet the then pressing needs. It was shown that the traffic of the country had far outgrown railroad facilities, and that it was necessary for the railroads to have all possible help in an expansion sufficient to meet these conditions. This was one way in which by the development of railroads the shortage in transportation facilities could be gradually overcome. The country chose the other way, and if it did not choose it advisedly and with full insight, it was certainly blind to economic conditions, for the outcome of the plan that it chose was as inevitable as night follows day. Instead of following the policy that would lead to the expansion of railroad facilities commensurate with the growth and prosperity of the country, we followed the policy of reducing the volume of traffic and the prosperity of the country down to meet the railroad facilities. One meant the continuation of our splendid prosperity—a prosperity in which the whole country and every class, the day laborer, the farmer, the mechanic, the manufacturer, the merchant and the banker were enjoying their full share. The other meant poverty with a loss which 'almost staggers civilization,' which matches in its aggregate the cost of the Civil War, and which has already brought poverty and idleness to a million people or more. There was no difficulty in deciding which course to pursue. No human being of average intelligence who would honestly investigate the situation could help seeing as clear as daylight the outcome of the two policies which were open before us."

In a letter, in January, 1907, to President Finley of the Southern Railway Co., the MANUFACTURERS RECORD pointed out some of these conditions. It was stated that unless destructive criticism stopped and constructive work should become the order of the day there would come a breakdown in business which would cost the country more billions than were needed for railroad development to prevent such a collapse. In the pamphlet from which we have quoted it was said:

"Instead of criticism becoming less destructive it became more destructive. State officials and legislatures seemed to be running a race to see which could outdo the other in their work of ruin. The public looked on, and with thumbs down cheered the gladiators in their fight against the railroads. Intelligent men could see that we had reached a point where higher rates were absolutely essential in order to make railroads sufficiently profitable to enable them to carry out the vast schemes of expansion so necessary to national prosperity. Despite this the public—and this includes business men who ought to have known better, the uninformed who were led by agitators some of whom were moved by a desire to ride into power by catering to the prejudices of the people, and some by ignorance—were clamoring through the press, through State Legislatures, through the courts and wherever possible for lower rates or restrictive legislation to hamper railroad operations. At the very best, with the heartiest co-operation of National and State governments, it would have been exceedingly difficult to secure the capital needed to provide the facilities without which there would come a complete breakdown in the railroad and business interests of the country. Instead of this co-

operation there was almost universal condemnation. Lumber men who had seen their timber properties double and quadruple in value, whose mills were running to their utmost capacity at profitable prices for their output, joined in the cry for lower freight rates. They got lower rates. Some of them also got bankruptcy, and most of them have now had six months of idleness for their mills, and the depression since October last has cost them more than the higher freight rates would have cost them for the next ten years. Other manufacturers and merchants, with equal shortsightedness, not content with the splendid progress of their own business and their own community, joined in the campaign against the railroads. They, too, have learned a costly lesson. With a misunderstanding of the influence of such agitation that is incomprehensible, there seemed to be an impression that business activity and prosperity would be augmented by forcing down rates, regardless of whether railroads prospered or whether they were forced into bankruptcy. * * * Under such conditions the cost of transportation is of far less importance than the question of securing the facilities needed. We already have by far the cheapest railroad freight rates in the world—rates that are the marvel of the people of European countries. What we need now is not low rates, freight or passenger, but a vast increase in the facilities for handling business. Of all the absurd movements of the last few years in the railroad and political worlds, nothing else quite equals the efforts to force down railroad rates. It is almost puerile in its shortsightedness. It has cost our country billions of dollars without a redeeming thing to the credit side.

"Money for railroad expansion cannot possibly be had under present conditions. Infinitely better would it be for the whole country if the people would recognize that instead of reducing rates the railroads must be given authority to make a general advance in rates commensurate with the increased cost of doing business. The railroad business must be given an opportunity to make profits large enough to tempt capital from abroad to seek investment in railroad securities. Men are not going to put their money into such enterprises subject to the dangers of legislation, and they would be foolish if they did so unless the profit is great enough to justify the risk. To attempt to limit the earnings to 6 per cent. or even to 10 per cent., or to any fixed amount, is not only absurd, but economically false; for any plan to limit the earnings of legitimate business operations will inevitably react and cost the country far more than the difference between a fixed return and the profit which might otherwise be made. Their own preservation would necessarily require of the railroads as favorable rates as could be given with safety for themselves and their future, but there have been many inequalities in rates. That railroad officials have at times been shortsighted in not correcting these as rapidly as possible no one questions. This, however, in no way alters the situation that the country went at the correction of these troubles in the wrong way and in the wrong spirit, and in doing so brought disaster to everybody.

"Of recent years the public seems to have come to the conclusion that men with bulging bank accounts are eagerly waiting for an opportunity to put money into railroad securities though the control of the railroads is taken away from them, and to other people who have no financial interest in them is given authority to fix the rates at which they can do business. The idea is fallacious. The capital needed for railroad expansion is not going to seek railroad investment, but railroad men must seek the capital with diligence. They must be able to present the matter in such a way as to indicate profits large enough to justify the risk; or otherwise those who have the bulging bank accounts will keep their money themselves, or else put it in securities over which they would have some control. Are the people in public and private life who are fighting railroads and demanding impossible improvements willing to invest their own money in railroad securities at present? Not one of them. * * * The politicians and the agitators, as well as the people of the country at large, may as well face the situation and meet it squarely, with full recognition of this condition of affairs, for until they do there can be no thoroughly marked revival in railroad construction on a scale commensurate with the needs of the country."

Although that last sentence, as well as the others, was written about seven years ago, there has been no

marked revival in railroad construction since then, and the reason therefor is just as stated at that time. Continuing this discussion, it was said in the article from which we are quoting:

"People may theorize as much as they please; they may say that railroads must be forced to expand; that they must be capitalized at exact cost; that the bankers' profits must be eliminated; but they will wait until doom's day before they secure railroads on these conditions. The only possible chance for railroad construction on a large scale is to make investment in railroad enterprises and railroad securities more attractive than can be found by large capitalists anywhere else in the world. * * * This is written not in the interests of nor for the benefit of railroads, but in the interest of prosperity of the people of the whole country."

In recalling these statements made in 1906 and 1907 and 1908 we have done so merely for the purpose of pointing out that they are as true now as they were at that time. During the last seven or eight years the agitation against railroads and business interests has continued. Persistent efforts have been made not only to prevent an increase in railroad freight rates, but to bring about further reductions. The result fulfills to the minutest degree the predictions made by the MANUFACTURERS RECORD in the statements which we have quoted, and many others of a similar character published eight or ten years ago. These statements or predictions required no gift of prophecy and no especial ability to foresee the future. They were founded on simple facts so plain and clear that even the wayfarer, though a fool, might read them in advance if he desired to know the truth. These statements are even more vitally important today than they were when first made, for the railroad interests of the country have been going steadily down hill during all the period since these articles were written. We still face a condition as we did seven or eight years ago, but the condition has become more acute, the chasm to which we have been walking has become steadily deeper and more repulsive-looking as we come nearer to its edge.

It is up to the country to meet the situation. It is useless, ostrich-like, to stick our head in the sand and not see the enemy approaching. The Interstate Commerce Commission has a very great responsibility resting upon it as to whether it will grant higher freight rates to the railroads or not, but the Interstate Commerce Commission has to a large extent merely voiced public sentiment created by the agitators who, having nothing to lose, have sought to ride into power by developing a hostility to railroads and other business interests, and by preaching on every occasion, not the gospel of truth and good news, but the gospel of class hatred.

Prosperity in Cuba.

The Banco Espanol of Havana, which was established in 1856 and has a capital of \$8,000,000, in a letter to the MANUFACTURERS RECORD tells of the increasing prosperity of that country. Referring to an article about Cuba by Mr. Calderon, secretary of the Cuban Legation at Washington, which we recently published in the MANUFACTURERS RECORD, the vice-president of the Banco Espanol writes us:

"We are happy to say that the business outlook in Cuba is brilliant. Regardless of the outcome of the regrettable European war, it is evident that the continent's sugar industry has suffered an irreparable setback, which will cause a substantial advance in the value of Cuba's principal source of income.

"It is conceded that the crop, which will shortly commence to be gathered, will net the island from \$50,000,000 to \$100,000,000 above last season's; this increase representing actual additional profit.

"It is needless to say that this results in an additional purchasing power and that the various industries of the United States will share our prosperity, for aside of it being our natural market for the manufactured goods, etc., we import, the other markets will be seriously handicapped.

"The general financial situation is, therefore, as sound as it has ever been in the history of Cuba, and we have no hesitation in endorsing the optimistic feeling prevalent throughout."

According to this optimistic letter, the business activity in Cuba ought to furnish a very considerable market for American products.



CONSTRUCTING THE BAY STREET UNDERPASS AT MACON, GA.

TO FACILITATE TRAFFIC.

Interesting Construction Work in an Underpass at Macon, Ga.

The completion of the Bay street underpass at Macon, Ga., marks the beginning of an era of railway construction in that city which, with the erection of the magnificent new union depot and other improvements contemplated by the railways, will provide that city with a splendidly-equipped railway terminal. Bay street is a short street crossing the western throat of the Central of Georgia Railway Co.'s large and busy freight and switching yard, and with the several parallel streets on either side carrying a large team traffic between the western portion of the town and that part of the "City Reserve" just beyond these tracks given over to numerous industrial enterprises.

This team traffic may reasonably be expected to increase very materially during the succeeding years, for there are many desirable manufacturing sites in the reserve, having ample switching connections with the various railways, which are being developed by such industries as are being induced to locate in Macon through the extensive advertising campaign conducted by E. H. Hymen, secretary of the local Chamber of Commerce.

The location is an admirable one for the purpose, but because of the ever-increasing dangers of crossing at grade the numerous main line and switching tracks occupying the strip of territory between 5th and 6th streets, it was agreed between the City Council and the Central of Georgia Railway that the latter should construct a concrete underpass on this street, extending from Broadway (4th street) under 5th street, the Georgia Southern & Florida, the Central of Georgia yards and the Southern Railway, a total of 16 tracks, and under the blind end of 6th street into the "City Reserve" near 7th street, having an over-all length of 747 feet.

The approaches on either end descend on a 10 per cent. grade from the general street level until under the tracks, where the roadway becomes nearly level, having a two-tenths per cent. grade to drainage outlets at the "City Reserve" end, where drainage outlets are provided of sufficient capacity to keep the underpass dry under all conditions of weather. The roadway was paved with eight inches of concrete by the city paving department after the completion of the superstructure, and has a clear width of 20 feet, in addition to which there is a five-foot sidewalk extending from Broadway through to the far end. The sidewalk in the tunnel portion of the subway is three feet higher than the roadway, and pedestrians are protected by a three-rail gas-pipe railing along its outer edge, as are also the parapet

walls around the entrances. Thirteen and a half feet clear headroom in the tunnel give a well-proportioned appearance, while numerous electric lights afford protection from that element which might make themselves obnoxious in such a place.

The salient features of the job are the huge retaining walls and the combination concrete and I-beam floor carrying the railroad tracks over the roadway. Thirty-nine hundred yards of concrete were used in these walls alone, which are, under the track portion, three feet thick at the top and seven and a half feet thick at the base, where they rest on spread footings 10 feet wide.

The roadway carrying the tracks is built up of 26-inch Bethlehem I-beams, weighing 150 pounds per foot and spaced three feet apart. On top of the beams is an eight-inch reinforced concrete floor slab, which is thoroughly waterproofed with Barrett's specification pitch and felt, the waterproofing being carried down over the backs of the retaining walls, making the underpass water-tight. This floor is covered with 15 inches of crushed rock ballast, in which the railway tracks are bedded, a form of construction readily admitting of changes in alignment or slight changes in grade.

The plans for the underpass were prepared under the direction of C. K. Lawrence, chief engineer of the Central of Georgia Railway. Bids were taken for its erection in June, 1913, and the general contract awarded to the Southern Engineering & Construction Co. of Macon, who began construction in August under the personal direction of Chas. M. Preston, president of this company, and work progressed steadily without any delays except such as was necessarily incurred in providing for the continuous operation of trains over the structure, being completed in eight months.

Concrete was mixed in a Standard batch mixer, operated by an electric motor, hoisted to the top of an 85-foot frame tower and distributed to various parts of the work by means of an Insly chuting system supported clear of the tracks and trains by wire cables strung overhead.

The accompanying photograph shows the railroad tracks supported on the temporary pile trestling during construction operations and portions of the retaining walls completed, while the tower, with its chuting system, shows the ease with which the mixed concrete was distributed to the various parts of the work without interfering with railway traffic.

Texas City (Tex.) Cotton Manufacturing Co., authorized capital \$500,000, has been incorporated by E. A. Bynum, A. B. Slack and J. M. Head. It plans to build a large cotton factory.

WORK SUSPENDED AT BADIN.

European War Interrupts Operations of the Southern Aluminum Co.

[Special Correspondence Manufacturers Record.]

Salisbury, N. C., October 24.

Owing to the European war, the Southern Aluminum Co. is unable to get the necessary funds at the present moment to prosecute the work, and will suspend operations at Badin until the general conditions of the financial and industrial world are better. Since August there has been remarkable progress made on the project; foundations and steel superstructure of the power-house are up, with work under way on the brick work. Over 25,000 cubic yards have been placed of the concrete for the power dam, and the electrode factory is nearly completed. Portions of the structural steel framework are erected for both the furnace plant and the storage-house of the alumina purification plant. With such headway made on these great works there can be no doubt but that they will be completed just as soon as the times are more favorable.

It will be recalled that the Aluminum company is a French company, and has already suffered from the continental warfare. With the mobilization of the French army this enterprise lost temporarily three of its technical staff—Pierre Bergés, designing engineer; Louis Rosé, assistant chief engineer, and Hector Mondragon, mechanical engineer. Of these men, two have been severely wounded. Rosé, who is a lieutenant of infantry, was shot through the right lung, and Mondragon was struck on the elbow by a piece of shrapnel.

The Candler Plan of Cotton Relief.

[Special Correspondence Manufacturers Record.]

Atlanta, Ga., October 24.

As the result of the announcement that Asa G. Candler, president of the Central Bank & Trust Corporation, would, through that organization, accept cotton as collateral and lend at the rate of six cents per pound to the bank's customers, over 10,000 bales have been accepted in effecting loans. These loans are made only on cotton stored in the warehouse that is now being erected for the bank.

H. J. Carr & Co., who have the contract to erect the warehouse of corrugated iron in units, of 5000 bales per unit, were today authorized to begin the construction of the second unit, making a total storage capacity of 10,000 bales. This will be ready within two weeks. The warehouse is on the belt line of the Southern Railway.

The Central Bank & Trust Corporation is not lending money direct to the farmers, but is dealing entirely with the country banker or storekeeper, and they, in turn, deal with the farmer. There has been quite an agitation regarding the reduction of the cotton production next year in favor of raising livestock and food-stuffs, and some think that in making these loans the Central Bank is demanding that the farmers reduce next year's cotton. But such is not the case. A. P. Coles, vice-president, states that they are leaving that for the farmer to decide, and that the bank is mostly concerned in helping its customers out of the present difficulty.

It is generally believed here that Mr. Candler's move and publicity given it, with the consequent similar moves by other banks, is the start of a general relief wave for the South. Things began to loosen up this week, so the sales managers of several concerns say, and they believe that it is caused by the belief that the end of the present crisis is in sight.

Under the auspices of the Atlanta Chamber of Commerce 3010 signed pledges have been made by bankers in 11 Southern States to give financial aid to farmers who will agree to provide in 1915 for a cotton crop, one-half the 1914 crop and to raise food crops.

Building at Roanoke.

Secretary John Wood of the Chamber of Commerce of Roanoke, Va., referring to plans for an auditorium in that city, writes to the MANUFACTURERS RECORD:

"This movement grows out of a recognition of our great need for an auditorium, convention and exposi-

tion hall. While it is proposed to organize a stock company, the undertaking will carry rather a popular subscription. Definite plans have not been drawn, and will not be until the financial situation has been worked out. It is the purpose of our committee to proceed at once.

"Contract for Roanoke's new city hall has been let for \$218,000. Total cost will be about \$250,000. That the Jefferson building, to be the new home of Thurman & Boone Company, furniture dealers, and the S. H. Heironimus Company, department store, costing about \$150,000, is well under way, and that fine progress is being made on our new \$100,000 Y. M. C. A. building. Outside of this a considerable volume of work is going forward. It is anticipated that the building of the proposed auditorium and exposition hall will bring about an increase in our hotel facilities.

To Let Contracts on the Great Cotton Warehouses at New Orleans.

The Board of Commissioners of the Port of New Orleans will erect cotton warehouses and a terminal, consisting of large one-story reinforced concrete warehouses, cotton-compress shed and building and reinforced concrete wharf, the total cost of which is estimated at approximately \$2,500,000. The Board has decided that, due to certain local conditions, the work will be let in two contracts, the first of which will include the cotton-compress shed and the consigned warehouses. The following authoritative announcement is made:

"At a meeting of the Board of Commissioners of the Port of New Orleans, Ford, Bacon & Davis, as engineers of the Board for the construction of the cotton warehouses and terminal, were instructed to have plans and specifications ready by the first week of November and to be prepared to advertise for bids beginning November 15. Plans and specifications will be sent out by the engineers to prospective bidders upon request when accompanied by a deposit of \$100, which deposit will be refunded upon the return of plans and specifications to the engineers."

San Antonio-Austin Post Road.

Surveys are practically completed, plans being prepared and construction bids will be invited within five weeks for constructing the San Antonio-Austin post road in Texas. This highway will be 71 miles long by 15 feet wide, of gravel construction, costing about \$240,000, of which amount the Government will furnish \$80,000 and Travis, Comal, Hays and Bexar counties contribute \$160,000. W. A. Crossland, San Antonio, United States Senior Highway Engineer, is the engineer in charge, and construction will be under the direction of the United States Department of Agriculture, Office of Public Roads.

A \$122,000 Sewer Contract.

Contract has been awarded for constructing the 18 miles of sewers decided upon by the city officials of Miami, Fla. It calls for completion within 180 days, and was awarded to the J. J. Quinn Company of Bedford, Ind., at \$122,077.62. The company includes in its equipment a ditching machine propelled by traction engine.

New Machinery Costing \$50,000.

The Lanett Cotton Mills, West Point, Ga., will expend about \$50,000 for its new additional machinery mentioned last week. This equipment includes 38 cards, with complementary drawing and roving frames, contract having been awarded to the H. & B. American Machine Co. of Pawtucket, R. I.

Newport Rolling Mill.

The Newport (Ky.) Rolling Mill has drawn its plans and will undertake improvements, to include a building to replace its present wooden structure for galvanizing department. Contract for the new mill, of iron, with glass skylights and electric cranes, has been awarded to the McClintick-Marshall Construction Co. of Pittsburgh.

BUILT IN RECORD TIME.

Plant of the Santee River Cypress Lumber Company.

The great Beidler plant at Ferguson, S. C., of the Santee River Cypress Lumber Co., designed and built by C. M. Steinmetz, engineer, Washington, D. C., the well-known sawmill builder and contractor, is a composite creation of rip mill, alleyway and molding bins; electric craneway and rough stock bins; box shop and alleyway; planing mill and alleyway; filing-room; sorting and storage-houses with alleys and bins, and large loading or shipping platform.

The design comprehends a covered loading platform with overhung apron above railroad shipping track, properly sheltering the cars at the front and built perpendicular to the other department of the building.

The interior is illuminated by natural light from four immense monitors, provided with standard factory sash set in mullion frames, while extra monitor provides direct light over the machines.

The roof water drainage is accomplished by suitable gutters and downpipes of 15-inch size, and heavy galvanized iron, the gutters leading into large funnels, and the whole volume of water is conveyed into the river through 15-inch vitrified sewer pipes. Three large valleys on the roof convey the rainwater to the gutters; no pipes or gutters are inside the building.

The engineering designing was begun by Mr. Steinmetz in February, the surveying done in April and the concrete foundation begun in June, all in 1913. The framework was started the latter part of October, 1913, the roof covering was laid in June, 1914, and the building was completed in July. Deducting delays caused by bad weather, the Christmas holidays, lack of materials, etc., the whole work was completed in about 210 working days.

The entire structure, under one roof, is approximately 400x400 feet, and this whole site, formerly rough and rolling ground, was made level with car floor by excavating and filling with hard clay soil. The height of the building to first plates (length posts) is 25 feet and to the highest monitor 48 feet. The frame is yellow pine dressed throughout and of 10x10 and 12x12 timbers bolted together.

The posts, treated with wood preservative, were set upon heavy cast-iron plates padded with felt and supported by 326 reinforced concrete piers 16x16, with about 2½-inch batter resting upon clay bottom.

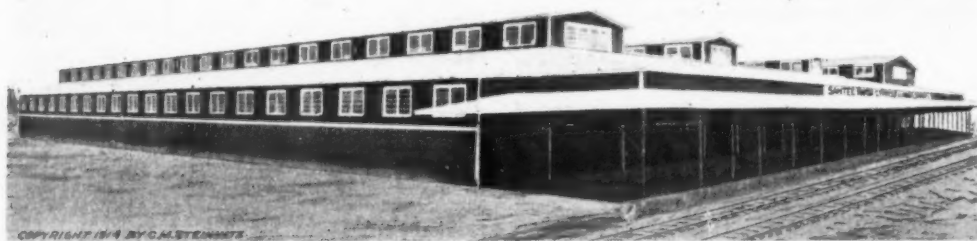
A reinforced concrete retaining wall 400 feet long, 8 feet high and 6 feet wide is built along the shipping track on entire front, the mill floor being brought to level with the car floors for quick and handy loading.

About 50,000 cubic feet of reinforced concrete was used in foundation work, drainage, culverts, etc.; 900,000 feet, board measure, of yellow pine and cypress timbers and lumber were used and 165,500 square feet of roofing covers the building. The cubic area of the structure is over 5,000,000 feet. The superficial area is more than 138,000 square feet. There are four monitors from 20 feet to 72 feet wide by 360 feet long, and 654 factory sash set in 327 mullion window frames. Over three carloads of bolts, ironwork and steel were required, with 500 gallons of paint, 720 linear feet of 24-inch steel I-beams, with 55-pound steel rails, etc. The total approximate cost for filling and concrete work materials, etc., was \$18,000. The building proper cost approximately \$42,000 and the equipment \$65,000, making a total approximate cost of \$125,000.

The entire plant is driven by induction motors of the unit system, individual drive wherever practicable and by the group drive where otherwise necessary. A special direct-current generator furnishes power for operating traveling crane, monorail, etc. The initial parent power is derived from a 625-kilowatt steam turbo-generator attached to condenser, pumps, etc. The current is 440 volts, 60 cycle, three-phase.

The scheme in the layout constantly held in mind was to create the most economical and labor-saving operation possible consistent with good engineering practice and sound mechanical judgment gained from years of practical experience in lumber-milling lines.

The plant will produce shooks, from caddies to packing boxes; moldings to finish; balusters, pickets, bed slats, insulating pins, etc.; special flooring patterns, wainscote, base, house-trim and other styles of lumber in gum (specially treated), cypress, hardwoods, pine, etc. Nothing is going to waste.



TWO VIEWS OF PLANT OF SANTEE RIVER CYPRESS LUMBER CO.

The rip mill has three heavy-duty gang edgers, driven by individual motors of heavy power. A gravity roller table in front, but at one side of edger receives stock from the electric crane and supplies stock to edgers. A 4-chain transfer table at one side and back of edger handles stock worked up and sorted in piles and made ready for crane, which delivers to the box shop, the various machines or for shipment rough. Three automatic foot cut-off saws and tables, with direct motors, work up stock from each edger opposite each machine; the refuse from all these machines is handled in a chain conveyor of special design, driven by B. G. motors and delivered to large chipper set under floor of mill, as is likewise located this conveyor. Ample alleyway space is provided for monorail system and rapid handling of stock. Dimensions of rip mill are 60x216 feet.

The sorting and transporting department is 72 feet wide and 380 feet long, with continuous gallery around the crane runway. The electric traveling crane is 60 feet span and 14 feet wheelbase, on 55-pound steel rails and resting on 24-inch steel I-beams, having 36 feet span and supported by Howe truss 36 feet span, resting on 10x10 and 12x12 timbers, double post lacing, two parallel lines of posts on either side of runway. A direct-current motor 10 horse-power is for the lift and a five-horse-power for the crane. Tracks are 28 feet above the mill floor. Stock is handled from the railroad tracks at the north end of house or from Tonaawanda trucks at the south end, and from edgers to machines. The unit package system will be used (4x1x20 feet), thus dispensing with manual labor, hand trucks, etc. The storage bins provided in cranehouse and rip mill have capacity of more than 1,000,000 feet of stock.

The box shop is approximately 90x90 feet, built between the loading platform, planing mill and craneway. Stock for this department is placed at the craneway end by the crane and passes through the shop either to the shipping platform or through alleyway to storage bins. The equipment consists of four rip and crosscut saw tables, one rip saw table, one Whitney planer, one 10-foot Linderman machine, L baluster lathe, three Picket heading machines, one boxboard matcher, two automatic nailing machines, one two-color printer, one vertical slab resaw and other machines. A chain refuse conveyor system driven by B. G. motors to remove refuse from these machines is built under the floor of mill and deposits the refuse into another conveyor running through the rip mill. Each machine is of individual motor drive.

The planing mill department adjoins the box shop and craneway is 110x216 feet. It is provided with large space in front and in rear of machines, also alleyway in rear. The machines are set between two rows of monitor posts, and afford ample room for two machines in each bent, the monitor running crosswise the machines at about 35 feet. The equipment is one heavy double surfacer with feeding table, two fast-feed matchers with feed tables, two fast-feed floorers with feed tables, two molders, two vertical band resaws, the necessary automatic swing cut-offs, etc.; individual motor drives with flexible couplings, starting apparatus, etc. A train of steel dend rollers, 10 inches by 4 feet long set every three feet are provided in front of each machine from the craneway on the mill floor, and the

unit lumber package is deposited on same by crane and the load pushed up to the machines by two or three men. The rolls are fitted with anti-friction bearings. The units are 2000 to 3000 feet stock, and space for three units is provided in front of each machine. The last 24 feet section of rolls is made with counterbalance lift, and rises at the will of the machine operator as fast as each tier of stock is worked off through the machine. This permits fast work keeping machine stocked and obviates lifting of stock onto machine.

A simple and complete slow-feed blowpipe system is located in the monitor above machines, with ample capacity for carrying off all shavings, waste, etc., the main receiving pipe delivering into relay fans, thence by discharge pipe into main fuelhouse, some 600 feet travel. The fans are driven by individual motors.

There is an electric monorail line for each machine at discharge end, through the box shop and rip mill, along loading or shipping platforms, with suitable switches and motor carriers, handling the unit packages of stock through alleyways and over storage bins in dressed stock department.

The storage bins have an approximate capacity of 5,000,000 feet. These bins are in two lines in each storage-house, with 26-foot alleyway in one and 32-foot alleyway in the other, each alleyway having a line of bins on either side; the bins set 18 feet wide by 25 feet high and 24 feet deep by 360 feet long.

Are lamps of special pattern and power throughout the plant and over machines will provide ample artificial illumination during the dark periods and for night operations. Wires are carried in suitable conduits.

Standard Underwriter water supply system, standpipes, hose racks, etc., automatic sprinkler system and necessary hydrants located outside the plant afford ample water service under pressure at all times and provide complete fire protection.

West Virginia's Road School.

The second annual road school under Chapter 41, Acts 1913, of West Virginia, will be held under the joint auspices of the university and the State Road Bureau December 1-11. The law requires all county engineers to attend. The course is free to any citizen who wishes to avail himself of the instruction. All phases of road and bridge construction and repairs will be taken up and discussed by experts in each special line. A number of machine companies will have exhibits on the ground. A complete set of models of all kinds of road machines will be in the lecture-room. Tests of materials will be made to demonstrate certain truths. Last season 146 were enrolled.

A Proposed 800-Mile Highway.

The Dallas & Southwestern Motorway Co., Dallas, Tex., has been incorporated, with an initial capital of \$75,000, by G. W. Smithson, George L. Maddis, L. W. Garrettson and others. It proposes to construct an 800-mile highway from a point on Red River, in Red River county, to Del Rio, in Val Verde county, connecting Dallas, Waco, Cedar Knob and other cities.

Good Roads and Streets

SOUTHERN HIGHWAY ACTIVITIES.

Details of Week's Progress in Improvements in City and Country.

Further details of road and street undertakings and bond issues mentioned below are given under the headings Construction Department and New Securities, published elsewhere in this issue.

The MANUFACTURERS RECORD invites from its readers information about road and street work projected or under way, photographs of good roads and discussions of matters pertaining to the betterment of the highways of the South.

Bonds Voted.

Batesville, Tex.—Zavalla County Road District No. 4 issued \$20,000 bonds to improve roads.

Marianna, Fla.—City voted \$3000 bonds to improve streets.

Newport, Tenn.—City voted \$5000 bonds to construct streets and sidewalks.

West Palm Beach, Fla.—Salerno District, Palm Beach county, voted \$100,000 bonds for roads and bridges.

Bonds to Be Voted.

Meridian, Miss.—Lauderdale County Road District No. 1 will vote November 3 on \$50,000 bonds for road construction.

Contracts Awarded.

Baltimore, Md.—City awarded \$14,424.40 contract to pave alleys with concrete.

Bartlesville, Okla.—City awarded contract for 3500 square yards of paving.

Charleston, W. Va.—City awarded contracts to pave 29 streets, aggregating 64,691 yards.

Covington, La.—State awarded contract to construct 16½ miles improved earth highways in St. Tammany parish.

Lancaster, S. C.—City awarded contract for 10,000 square yards cement sidewalk.

Louisville, Ky.—City awarded \$10,500 contract to reconstruct 9th street.

Norfolk, Va.—City awarded contract for 1400 square yards paving.

Sulphur Springs, Tex.—City awarded contract to place 2000 feet of concrete curbing.

Tulsa, Okla.—City awarded \$16,500 paving contract.

Vanceburg, Ky.—Lewis county awarded contract to construct 1½ miles of water-bound macadam road.

Vicksburg, Miss.—Warren county awarded \$1616 contract to construct two miles of road.

Contracts to Be Awarded.

Asheville, N. C.—Buncombe county opens bids November 6 to construct seven miles of bituminous macadam road; \$50,000 to \$60,000 available.

Centerville, Ala.—Bibb county receives bids until November 25 to grade, drain and surface with chert portion of Centerville and Blockton road; expenditure \$10,542.26

Charlotte, N. C.—City will expend \$8500 to improve streets.

Crowley, La.—City opened bids October 27 to construct cement sidewalks; estimated cost \$65,000.

Cullman, Ala.—Cullman county receives bids until November 17 to grade, drain and surface with slag and chert about 1½ miles of Bremen road; cost \$6542.26.

Jacksonville, Fla.—City receives bids until November 23 to construct about 1906 square yards Dolarway pavement with cement curb.

Lexington, Ky.—City opened bids October 26 to construct 380 yards of brick or asphalt paving.

San Antonio, Tex.—Government will expend about \$240,000 to build 71 miles of road.

Selma, Ala.—City will construct 5300 square yards concrete pavement.

Smithville, Tex.—City has \$3000 available to continue street improvements, etc.

West Tulsa, Okla.—City will pave 10 blocks at a cost of \$12,000.

VITRIFIED PIPE CULVERTS IN ROAD-MAKING.

By BENJAMIN BROOKS, Engineer the International Clay Products Bureau.

The greatest ally of the civil engineer and at the same time the worst enemy is water. Water locates his railways and wagon roads by furnishing good grades through otherwise impassable country; and, having located them, water proceeds to destroy them if allowed to take its course. There are many ways of maintaining the surface of a road, given a good foundation, but only one way to maintain the foundation—by keeping it high and dry and out of the water.

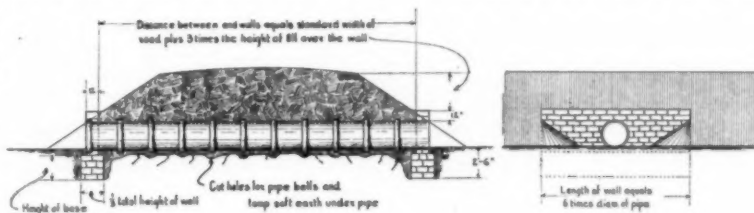
This brings us to a feature of road-building that is more and more attracting the special attention of road engineers—the culvert. No permanent culverts, no permanent road. They have all reached this conclusion.

But the engineer's attention has first seized upon the large waterways, the long bridges, the high bridges. The little pipe culverts have gone begging. Yet there are far more pipe culverts than bridges on any well-planned road, and many more miles of road dependent on them. The difficulty is that while a county may economically employ an engineer to design a large bridge, it cannot afford to employ one for every culvert, and the culvert has suffered accordingly. Various means have been devised to build good culverts without adherence to engineering principles.

The logical solution of the culvert problem is to take the best and most permanent culvert material and arrange some economical means to get it used in an engineering way. The South has an abundance of good clay and of factories able to make it into the best quality of clay pipe. Vitrified clay sewer pipe made by Southern manufacturers put New Orleans on the map. The same material, used as culverts, made the boulevards

On this basis one 12-inch clay pipe will drain 5 acres; one 15-inch clay pipe will drain 8 acres; one 18-inch clay pipe will drain 11 acres; one 21-inch clay pipe will drain 15 acres; one 24-inch clay pipe will drain 20 acres; one 27-inch clay pipe will drain 25 acres; one 30-inch clay pipe will drain 31 acres; one 36-inch clay pipe will drain 45 acres.

Thus the proper diameter can be quickly determined as one goes along the road. The length of a culvert is simply the width of the embankment at the level of the top of the pipe, or the width of the road plus the spread



PLAN OF VITRIFIED CLAY PIPE ROAD CULVERT, SHOWING VARIABLE DIMENSIONS IN TERMS OF PIPE DIAMETER.

of the embankment down to that point. If a 16-foot road passes 6 feet over the top of a clay-pipe culvert, assuming the usual $1\frac{1}{2}$ to 1 slope, the culvert will be 32 feet long. So much for the pipe itself.

The head walls can simply be designed with all their variable dimensions in terms of the pipe diameter, and there you are. One engineer with one road map showing depths of cuts and fills and areas draining toward



THE MOST NECESSARY PART OF A CULVERT BULK-HEAD IS UNDER IT, NOT OVER IT. THIS ONE IS A BURDEN INSTEAD OF A PROTECTION.

it can estimate and order all the culvert materials at once and issue one blueprint to build them by.

It remains, then, for him to instruct his foreman on one or two fundamental points common to all culverts. First, he must make it plain that where a stream crosses a road, the stream by the nature of things always has the right of way. The culvert which is to carry it must, therefore, be placed on the natural stream bed—not higher nor lower. If, then, the road must be raised to pass over it, raise the road, but do not bury the culvert deeper than the natural stream bed, for it will fill with mud.

A culvert, no matter what it is made of, must be well bedded and must have the earth well tamped between the trench and the side of the pipe, and its joints must be made tight. That's the value of the socket on a clay pipe. It doesn't leave any leaky seams or rivet holes to undermine the pipe. The end bulkheads are not ornaments, primarily, and the most valuable part of them is underground to prevent undercutting. Many a culvert bulkhead is built one foot below the pipe (or even less) and three feet above it. These figures should be exactly reversed. A culvert is attacked from below, not from above. Any good foreman can understand these simple points.

By adherence to a few rules the Park Board of Kansas City have made all their small culverts of clay pipe for years and run steam rollers over them immediately on completion, and have never lost one. There is no miracle about their success, but simply applying to good clay pipe in the first place the same engineering attention that they give to larger highway structures, only in a more economical and standardized way.

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

ALABAMA GREAT SOUTHERN.

Financial Provision Made for an Extension, Building of Second Track, Etc.

An interesting review of its construction work and plans is presented by the Alabama Great Southern Railroad Co. in its annual report just issued. One of the purposes of its new first consolidated mortgage was to provide money to build an extension from the northern terminus at Wauhatchie, Tenn., about three miles to a connection with the Lookout Mountain line of the Southern Railway leading to the terminus at Chattanooga. On this the right of way has been acquired and construction started in the name of the Wauhatchie Extension Railway Co., which was organized for the purpose. The Alabama Great Southern owns this latter company.

Other work contemplated under the mortgage is construction of second track from time to time until the entire line is double-tracked, completion of the automatic block signal system, reduction of certain ruling grades, economical changes of alignment, construction of depots and track facilities at stations, shops and shop facilities, enlargement of yards, building of spur tracks, team tracks, erection of freight houses, etc. Such improvements are to be made whenever necessary.

No second main track was actually constructed during the year, but the engineering and other preliminary work has proceeded looking to the building of such track between points where the need for it is greatest. But there were built about $7\frac{1}{2}$ miles of passing and sidetracks. Substantial progress was also made in completing the installation of electric automatic block signals, and it is expected that this kind of signal will be in operation along the entire main line between Chattanooga, Tenn., and Meridian, Miss., by November 1.

There were five Mikado type freight locomotives bought and received from the builders; also a steam-operated ditching machine.

A complete metallic telephone line for dispatching service on the main line has been put in use.

There were 48 new industrial plants located on or contiguous to the line during the year. They will afford an estimated freight tonnage (inbound and outbound) of 5690 cars per annum.

The income statement shows: Gross operating revenues \$5,385,307, increase as compared with the preceding year \$153,322; total operating expenses \$4,227,463, increase \$411,559; net operating revenue \$1,157,843, decrease \$258,237; net revenue after deficit from outside operations \$1,151,236, decrease \$257,468; operating income after taxes \$961,379, decrease \$271,284; total gross income \$1,338,881, decrease \$380,215; total available income \$1,108,519, decrease \$391,016; balance of income over charges \$757,186, decrease \$377,433; balance to profit and loss after dividends \$554,363, decrease \$377,433.

TEXAS & PACIFIC'S YEAR.

Terminal Plans at New Orleans Outlined—Industries Established.

The Texas & Pacific Railway Co.'s annual report contains information regarding the improvement of terminal facilities through the Trans-Mississippi Terminal Co. at New Orleans, which latter is controlled jointly by the Texas & Pacific and the St. Louis, Iron Mountain & Southern roads, each owning one-half of the stock. To begin the work of improvement the Texas & Pacific leased to the Trans-Mississippi Terminal Co. all of its facilities and property at New Orleans, including rights and franchises; also all its property on the western bank of the river there, including the transfer boats, and all of its property at Goulsboro, Gretna and Westwego, including elevators, docks and wharves, besides the main line tracks to the ninth milepost. As heretofore published, the trains of the St. Louis, Iron Mountain & Southern Railroad will enter New Orleans via the Texas & Pacific line from Ferriday via Addis, La.



VITRIFIED CLAY PIPE CULVERT ON THE MISSOURI PACIFIC RAILWAY NEAR DODSONS, MO.

vard system of St. Louis and Kansas City possible in the first place, and finally famous for their beauty and uniform smoothness. Its permanency against rust, frost and decay, its smooth water-carrying surface, its general cheapness and simplicity have always recommended it. There is no trouble about good culvert material on the southern half of the map.

Now, as to using it as a road engineer should. Since we cannot afford a separate engineering design for each culvert, we must have a general design that will apply to a whole series of culverts and be right for each one. After all, there is no great difficulty about it. We start with the area to be drained by the stream. The Santa Fe Railway for Mississippi Valley States allows 100 square feet of culvert area for each square mile drained.

Pending the final financing of the new terminal company the Texas & Pacific has advanced to it \$432,635, and it is intimated that further advances will be made.

The Trans-Mississippi Terminal Co. will issue \$7,500,000 of bonds for the projected new terminal station in New Orleans.

There have been 42 industries located during the year on the lines of the Texas & Pacific Railway.

The income statement shows: Total revenue from transportation \$18,462,578, increase as compared with the preceding year \$575,760; total operating revenues \$18,652,684, increase \$573,901; total operating expenses \$14,238,006, decrease \$534,773; net operating revenue \$4,414,678, increase \$1,108,675; net railway operating revenue after deficit from outside operations \$4,352,142, increase \$1,086,554; railway operating revenue after taxes accrued \$3,594,801, increase \$1,022,654; gross corporate income \$3,767,661, increase \$1,017,190; net income \$1,485,847, increase \$894,006; net corporate gain \$377,778, increase \$1,138,120, there having been a loss of \$760,341 last year; ratio of operating expenses to operating revenue 76.33 per cent., decrease 5.38 per cent.

Cherry River & Southern Line.

A report from Ronceverte, W. Va., says that the permanent survey has been completed for the construction of the Cherry River & Southern Railroad, which was chartered last autumn to build from the confluence of the Cranberry and Gauley rivers to Ronceverte, about 40 miles. Headquarters are at Charleston, W. Va., and the incorporators are H. L. Kirtley, George W. McClintic and W. G. Mathews of Charleston; A. Bringardner of Columbus, O., and Samuel W. Richey of Cincinnati, O. It is expected that contracts will be let as soon as possible.

It is further stated that the route begins at Curtin and follows Gauley River to the mouth of Hominy Creek (via Brock's Bridge, 2½ miles from Summersville), up the creek eight miles, crossing the divide between Meadow and Gauley rivers to Angling Creek, which is followed to Meadow River, and then up the latter to Bay's Ferry. It is estimated that \$500,000 will be invested. At first the road will be a narrow gauge, but will be made standard as soon as business warrants the change.

About 100,000 acres of coal and timber lands will be developed and means of transportation will be furnished to Summersville and other points in Nicholas county.

New Equipmnt, Etc.

Nashville, Chattanooga & St. Louis Railway has ordered 1000 box cars, of which 500 will be built by the Mt. Vernon Car & Manufacturing Co., Mt. Vernon, Ill., and 500 by the American Car & Foundry Co., St. Louis.

Southern Railway has awarded a contract to the Pennsylvania Steel Co., Steelton, Pa., for 4400 tons of rails.

International & Great Northern Railroad has ordered 850 tons of bridge steel from the Wisconsin Bridge & Iron Co., Milwaukee.

Charleston Traction Co., Charleston, W. Va., has ordered 12 double-truck cars from the Cincinnati Car Co., Cincinnati, O.

Cincinnati, New Orleans & Texas Pacific Railway has ordered 465 tons of steel for eight bridges from the McClintic-Marshall Construction Co., Pittsburgh.

Cable Road on Apple Farm.

Mrs. Moses H. Cone of Greensboro, N. C., says a report from there, is having a small railroad built on her country place near Blowing Rock, N. C., to connect her large apple orchards with the packing-houses where the fruit is prepared for shipment. The orchards were planted several years ago, and are now yielding large crops. The railroad will be about a mile long, and will be operated by means of a stationary engine and a cable.

Kansas City Southern Report.

The annual report of the Kansas City Southern Railway Co. for the fiscal year ended June 30, 1914, shows

gross revenues \$10,993,453, increase as compared with the previous year \$287,144; total operating expenses \$6,910,320, increase \$163,163; net revenue \$4,083,132, increase \$123,980; operating income after taxes \$3,515,275, increase \$21,462; ratio of operating expenses to gross revenue 62.86 per cent., a decrease of .16 of 1 per cent.; ratio of operating expenses and taxes to gross revenues 68.02 per cent., increase .05 of 1 per cent.

Baltimore & Ohio Statement.

The Baltimore & Ohio Railroad Co. reports for September operating revenue \$8,782,332, decrease as compared with last year \$599,714; total operating expenses \$6,148,203, decrease \$529,425; net operating revenue \$2,634,129, decrease \$70,280.

For the first three months of the current fiscal year (July, August and September) the figures are: Operating revenue \$25,629,296, decrease \$2,414,537; total operating expenses \$17,955,928, decrease \$1,729,270; net operating revenue \$7,673,368, decrease \$685,267.

In making this statement the railroad company says that to accord with the classification of accounts by the Interstate Commerce Commission, items heretofore called "outside operations" are distributed through the different accounts, last year's figures being recast to permit of comparisons.

Plans for an Extension.

F. W. Hoover, vice-president and general manager of the Nashville Railway & Light Co., Nashville, Tenn., has been elected president of the Nashville-Galatin Interurban Railway to succeed H. H. Mayberry of Nashville, who built the line and who resigned to push his plans for the extension of the interurban railway to Springfield, Tenn. E. C. Edgar was elected general manager. He is also general superintendent for the Nashville Railway & Light Co. H. C. Walters was chosen secretary and treasurer.

New Station at Spartanburg.

Representatives of several railroads interested and the directors of the Chamber of Commerce at Spartanburg, S. C., have accepted the plan submitted by the Southern Railway Co. for the contemplated union passenger station there. It is stated that the new station will be an enlargement of the present depot, and that the improvements will cost more than \$40,000. It will be used by the Southern Railway, the Clinchfield Railway and the Charleston & Western Carolina Railroad.

Cotton Mill Stock Oversubscribed.

Referring to the new \$500,000 cotton mill which has recently been organized at Lagrange, Ga., Mr. Fuller E. Callaway, in a letter to the MANUFACTURERS RECORD, gives the interesting fact that notwithstanding the general talk of hard times, the stock of this company has been oversubscribed by local people, and that the subscriptions will have to be curtailed unless the capital stock shall be increased. In his letter he says:

"The capital stock will probably be limited to \$500,000 at the outset, although this amount has been oversubscribed, and we will have to partially disappoint some of the applicants if this limitation or the capitalization is made. Provision was made for this contingency in the form of subscription, however, and in allotting the stock preference will be given to home people. More than four-fifths of the ownership will be held by local investors.

"As previously explained, we prefer not to publish details as to the product, but really if we were willing to do so it would be difficult to find one general term that would cover the line. It will be a specialty mill, for the most part following up trade outlets developed through our experience in building and operating the other five mills composing our organization. We will also be in position to go after some desirable export trade whenever such outlets are available."

FOREIGN NEEDS.

Machinery and equipment wanted abroad are mentioned in many letters received by the MANUFACTURERS RECORD, which is so widely read in foreign countries that we are in constant receipt of many letters from all parts of the world. For the benefit of our subscribers seeking foreign trade we publish the following extracts from recent letters:

Wants Building Construction Plans.

Misael Jimenez M., Apartado Correos Num. 136, San Jose, Costa Rica, writes to the MANUFACTURERS RECORD as follows:

"I have an order from a large and important construction house to get proposals in regard to construction work with suitable guarantees on both sides. We would like communications in regard to making and furnishing estimates and plans for buildings, according to indications which will be given in each case. The factory shall accept work, but not charge for estimates or plans until proposal is accepted with the condition that all iron and other material as far as possible shall be purchased from them. It is understood that the engineer in charge looks to the manufacturer for a small commission. My client wishes to be informed of designs and patents for the construction of buildings of reinforced cement, and he would also like to know if the factory can produce reinforcing material of iron according to the Kahn system. It is not desired to put up buildings of iron or steel with cement walls. It might also be desirable to find some technical firm or manufactory of iron for reinforcing or an engineer who would make a special study of plans and details for buildings of reinforced cement according to the Hennebique system, which employs round iron for reinforcing. There are many buildings entrusted to our care, particulars of which we will submit at an early date."

Iron Pipe and Electrical Machinery.

Matt C. Little, 2452 Highland avenue, Cincinnati, writes to the MANUFACTURERS RECORD as follows:

"I am in receipt of a letter from Davison & Partner, engineers and contractors, 11 Carteret street, London, in part as follows: 'As you are aware, the Belgians and Germans have been doing the bulk of the trade in Great Britain in cast-iron pipes. The supply being now cut off, there is a good opening to introduce pipes made in America. Can you put us in touch with a first-class manufacturer of this class of goods? Would also like to handle one or two other classes of goods manufactured by reliable American firms, preferably electrical machinery, this class heretofore going principally to German firms.'

"As a regular reader of your widely read and influential paper, and having seen letters such as these from all parts of the world, I thought perhaps you would insert something on the lines given, as no doubt there are many firms in the U. S. A., especially in the South, that would like to get a footing in the markets of Great Britain, and now is the right time. I have known E. J. Davison for the last 20 years. He is a M. I. Meeh. E. of London, and is personally known to the leading gas and electrical engineers in Great Britain. He was connected with an Anglo-American concern for a number of years, and is a man that gets after business. I feel confident that business would result to the mutual advantage of both American firms and Messrs. Davison and Partner."

Opportunities in Santo Domingo.

Camara De Comercio, Industria Y Agricultura, Oficina Central, Arzobispo Merino No. 30, Santo Domingo, writes to the MANUFACTURERS RECORD as follows:

"In our opinion, as a result of the continued disturbance of commerce by the paralyzing war in Europe, the United States ought to control affairs here in regard to their products. In view of that fact the American merchants do not really need to think about profit at the present moment; on the contrary, in consequence of better prices and a better way of dealing with people, a way will be found to establish closer and more durable relations between them and our people, and who knows

but what they might be exclusive. But it is not less important to bear in mind that the charges would be fixed and unalterable so as to compete in that regard with the companies who are already rendering service here between the United States and this republic. But you must take into account that our land is a great producer of wax, honey, sugar, cocoa, coffee, hides, woods of different kinds, resins and fruits of so many varieties that we could not enumerate them. This Chamber of Commerce and Agriculture would appreciate very much from this moment to be able to enter freely into correspondence with the MANUFACTURERS RECORD so that there might be a mutual understanding of the advantages which both sides would derive from closer contact."

Construction and Roofing Materials.

Virginio Cattoretti, Casilla 131, La Paz, Bolivia, S. A., writes to the MANUFACTURERS RECORD as follows:

"I am interested to have the agency of some important firm dealing in expanded metal and other materials for roofing. In this country there is plenty of business to be done in construction materials, and if you could let me know of some good American firm dealing in them I shall be much obliged. As I am well connected with the majority and most important mining companies of this country, I could secure some very important business in these goods, and principally on expanded metal."

American Bank Reporter.

The seventy-eighth edition of the American Bank Reporter, corrected and revised to September, 1914, is issued. The fund of important information contained in this volume of approximately 2000 pages makes it especially valuable to all those interested in financial pursuits. Among the contents is found an alphabetical list of all National, State, savings and private banks in the United States and Canada, giving names of their principal officers, correspondents in large cities, together with charter number of each National bank, capital, loans, deposits, etc.; trust and investment companies, numerical system A. B. A., etc. Besides, names are given of reliable attorneys in the United States and Canada, bank officers, foreign banks and bankers, directors of banks in all of the principal cities, synopsis of banking and commercial laws of the various States and Canada, bank statements, statistics, etc., list of towns without banking facilities, with nearest banking point. It also contains maps of all States and Territories, including Canada, etc. The book, which has thumb index and is bound in blue cloth, with silver lettering, is published by the Steurer Publishing Co., 149th street and Bergen avenue, and 5-7 Beckman street, New York. In addition to the American Bank Reporter, issued in March and September, with new bank supplements, a desk edition is published in June and December.

Textile Notes.

The Savannah (Ga.) Knitting Mill, T. L. Austin, manager, is considering an enlargement.

Cannon Manufacturing Co., Kannapolis, N. C., will build a 100x30-foot addition to its cardroom.

Lanett Cotton Mills, West Point, Ga., has let contracts for 38 new cards, drawing and roving frames.

Woodlawn Manufacturing Co., Mt. Holly, N. C., has let contracts for combers for 10,000 spindles, wet twist-ers, winders and ball warpers.

Winder (Ga.) Cotton Mill has reorganized as the Barrow County Cotton Mill, with \$125,000 capital stock. J. M. Williams is president.

Charlottesville (Va.) Silk Mill has let contracts for 20 looms, 2 warpers, 2 winders, etc., to increase daily production from 600 to 1000 yards of silk.

Chamber of Commerce, San Antonio, Tex., is interested in a plan to organize a company to establish a \$200,000 to \$250,000 cotton mill. It is proposed to equip with 5000 to 7500 spindles, investing from \$150,000 to \$175,000 for buildings and machinery, with \$50,000 to \$75,000 for working capital.

MECHANICAL

Illustrations and descriptions having news value pertaining to developments in machinery, mechanical devices and inventions will be considered for use in this department.

Generators for Ford Power Plant.

The first shipment of the four generators which were designed by the Crocker-Wheeler Company of Ampere, N. J., for the direct current power plant for the Ford Motor Co. at Detroit, Mich., has been sent. It is said that about 15 cars will be required to transport all of the material which comprises these four big units, each

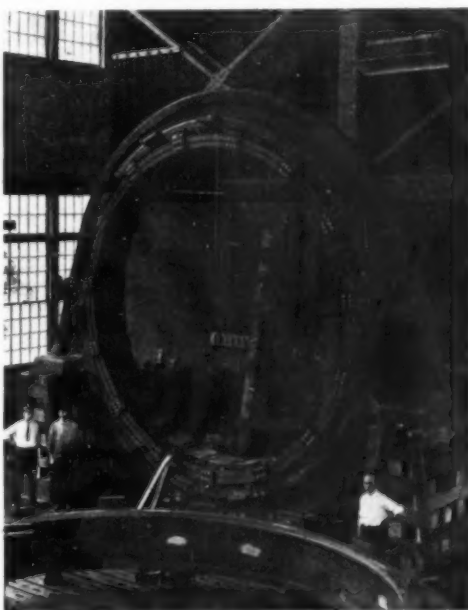


HAULING HEAVY GENERATOR PARTS.

one having a normal capacity of 3750 kilowatts and weighing 105 tons.

One of the illustrations shows a field frame, with coils assembled. It is 21 feet high and 26 feet wide across supporting feet.

The armature is approximately 16 feet in diameter, and weighs about 87,000 pounds. As these dimensions



FIELD FRAME, WITH COILS ASSEMBLED.

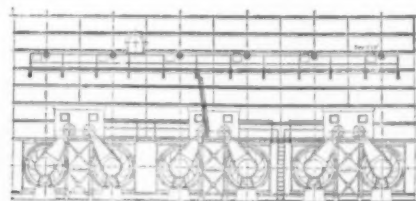
exceed the limits set by railroads for clearance on tracks, bridges and tunnels, the assembly of the armature parts and winding will be done in Detroit.

Large Wheeler Cooling Towers.

A battery of forced-draft towers for operation in connection with surface condensers and turbines, which is believed to be the largest cooling tower project ever undertaken, is being supplied by the Wheeler Condenser & Engineering Co. of Carteret, N. J., through Sargent

& Lundy, consulting engineers, Chicago, for the Texas Power Co. at Waco, Tex. The towers are of the steel shell type, arranged in a battery 100 feet long, 18 feet wide and 40 feet high. There are six pairs of 10-foot fans operating at 250 R. P. M., belt-driven by motors located above each pair of fans in small motor-houses. The fan housings are extended and are provided with doors which may be opened to permit unobstructed entrance of air for operation by natural draft during the winter season. A platform reached by a ladder from the ground serves the three motor-houses, and an upper gallery is built on the level of the water distributors and the water-regulating valves, which control the water discharge to each compartment. Any section may be

cut off for inspection or cleaning without interfering with the operation of any of the others. The water piping is designed for an additional installation of tow-



BATTERY OF WHEELER COOLING TOWERS.

ers of equal capacity to the left of the present battery. The present equipment is designed to cool 600,000 gallons per hour.

For Relief of Naval Stores Business.

John M. Blain of Savannah, Ga., writes to the MANUFACTURERS RECORD:

"The naval stores interests desire to encourage the development of any and all business using rosin and turpentine as constituents. We are anxious to aid in any way possible the establishment of new concerns of this character, or furnish assistance to any other well-organized manufacturers looking to the formation of branches in this section. We believe firmly that the European situation will long and seriously effect the demand for these raw materials, while the decreased facilities for the manufacture of the by-products will be inadequate to supply the demand for numerous articles already well established."

Dairy Instruction Trip Postponed.

It has been decided by the Southern Railway Co. to postpone for the present the tour of its special dairy instruction car over the lines between Atlanta and Fort Valley and between Atlanta and Columbus, and also over the Macon & Birmingham Railway and the Hawkinsville & Florida Southern Railway, which was contemplated for November 2 to December 13. Later on, when it is found possible to operate the car over these lines, ample notice will be given in advance so that all interested may have an opportunity to attend.

Construction Department

IN ORDER TO FOLLOW UP

Properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be written on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will generally be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur, as our reports are often published before new companies are known and before they have any established office for the receipt of mail.

WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

DAILY BULLETIN

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year.

All advertising contracts in the Manufacturers Record for three months or longer include a subscription to the Daily Bulletin for the contract period, as well as a subscription to the Manufacturers Record.

BRIDGES, CULVERTS, VIADUCTS

Ark., Crawfordville.—Crittenden County Drainage Dist. No. 3 has not completed plans for iron bridges lately noted to be constructed in connection with drainage canals; 30 structures, cost about \$30,000; average length 35 to 75 ft.; bids probably asked within next 6 months; bidders will be required to submit plans; W. H. Newsom, Engr., Wynne, Ark.

D. C., Washington.—Dist. Commrs., 509 Dist. Bldg., will expend \$100,000 to construct reinforced concrete bridge across Rock Creek on Pennsylvania Ave. N. W.; single multiple rib arch type; 200-ft. span, 70 ft. wide; will carry 2 street-railway tracks; D. E. McComb, Engr. of Bridges. (Lately noted to receive bids until Nov. 17.)

Fla., St. Augustine.—St. John county will construct concrete bridge; County Commrs. receive bids until Nov. 16; plans and specifications by J. B. McCrary Co., St. Augustine; W. Wallace Snow, Clerk of Board. (See Machinery Wanted.)

Fla., St. Augustine.—Ponce de Leon Bridge Co., capital \$30,000, incptd. to construct bridge across North River; Seth Perkins, Sr., Pres.; R. W. Wood, Secy.-Treas.; both of St. Augustine; Chas. J. Gardiner, V.-P., Davisville, Fla.

Fla., West Palm Beach.—Salerno Dist., Palm Beach county, voted \$100,000 bonds for bridges and roads; R. H. Rosseau, Chmn. County Commrs., Boynton, Fla.

Ga., Atlanta.—Morgan & Dillon, Archts., Grant Bldg., completed plans for connecting viaduct between Broad St. and Forsyth St. viaducts along north side of railroad tracks; reported that Griffin Construction Co. has contract to build viaduct and Frank Bernhardt to improve property along north side of tracks and on proposed viaduct level, etc.

Ga., Elberton.—Elbert and Madison counties let contract East St. Louis Bridge Co., East St. Louis, Ill., at \$10,195 to construct bridge over Broad River; steel and masonry; length about 500 ft.; plans prepared by School of Engineering of University of Georgia, under direction of Professor Slack.

Ga., Rome.—Floyd County Commrs. let contract W. A. Hicks, Birmingham, Ala., at \$5396 to construct concrete bridge across Armuchee Creek; length, 120 ft.; pile foundations.

Ga., Rome.—Floyd county is reported to vote Nov. 3 on bridge bonds. Address County Commrs.

Ky., Elizabethtown.—Hardin County Commissioners, Elizabethtown, and Grayson County Commissioners, Leitchfield, Ky., contemplate constructing reinforced concrete bridge at Hughes Mill; W. C. Montgomery, Hardin County Judge, Elizabethtown.

La., New Orleans.—City will expend \$8000 to erect reinforced concrete bridge across London Ave. Canal at Gentilly Rd.; 74x23 ft.; contract (lately noted) let to C. W. J. Neville, New Orleans.

Miss., Vicksburg.—Warren county will construct steel bridge across Big Black River at Holt's Ferry; bids until Nov. 3; J. D. Laughlin, Clerk. (See Machinery Wanted.)

Mo., Alton.—City votes Nov. 14 on \$55,000 bonds for viaduct and park. Address The Mayor.

Mo., Jefferson City.—Cole and Osage counties will construct steel bridge over Osage River; 3 spans, 200 ft. each; 16-ft. roadway; 600 ft. of approaches; cost \$65,000; E. F. C. Harding, County Highway Engr., Cole county. (Lately noted.)

Mo., Kansas City.—Atchison, Topeka & Santa Fe Ry. Co. will construct bridge across Kaw River; C. F. W. Felt, Ch. Engr., Chicago, Ill.

Mo., St. Louis.—City votes Nov. 3 on \$2,750,000 bonds to construct approaches of free bridge over Mississippi River; Jas. A. Hooke, Director of Public Utilities, to supervise construction. (Recent item erroneous.)

N. C., Greensboro.—J. M. Hobbs, Greensboro, has subcontract from Morrow Construction Co., Atlanta, Ga., to erect 1800 lin. ft. standard ballast deck pile trestles on Southern Ry.'s new double track between Greensboro and Reidsville, N. C.; material will be furnished by railroad; work requires about 500,000 ft. creosoted timber and 35,000 lin. ft. creosoted piles.

Tenn., Nashville.—Davidson County Commissioners will expend \$7000 to erect 7 reinforced concrete bridges; three 30-ft. spans, one 50-ft. span, one 25-ft. span, 16x24-ft. and 11x24-ft. culverts; Freeland-Klyce Engineering Co., Engr., 65 Life & Casualty Bldg., Nashville. (Lately noted to receive bids until Oct. 23.)

Tex., Boerne.—City let contract to construct bridge across Cibola River at Main St.; low structure of reinforced concrete; length 200 ft.; 13-ft. roadway; Willard E. Simson, Engr., Washer Bldg., San Antonio. (Call for bids noted in Sept.)

Tex., Coleman.—Coleman County Commrs. let contract A. L. Greenburg Iron Co. of Terre Haute, Ind., to construct 3 span bridges to cost \$6300.

Tex., Dallas.—City is reported to have plans prepared by J. M. Preston, City Engr., for viaduct at Merlin St.; Gulf, Colorado & Santa Fe Ry. to pay part of cost.

Tex., Harrisburg.—Harris County Commrs., Houston, instructed County Engr. to prepare plans and specifications for bridge across Brays bayou at Harrisburg on Houston-La Porte Rd.; Engr. will prepare 2 sets of plans, one for steel construction and other for reinforced concrete; width, 24 ft.; both sets to be submitted to War Dept. for approval; H. L. Washburn, County Auditor, Houston.

Tex., La Pryor.—Zavalla county let contract El Paso Bridge & Iron Co., El Paso, to construct low-water concrete bridge across Nueces River.

Tex., San Antonio.—Bexar County Commissioners let contract Topeka Bridge & Iron Co., Topeka, Kans., to erect 3-span concrete bridge over Zarzamora Creek.

CANNING AND PACKING PLANTS

S. C., Wedgefield.—M. L. Palmer is interested in organization of company to establish cannery.

Va., Lester Manor.—H. Borton, Mgr. H. Borton Pickling Co., Wakeman, Va., is reported to establish pickle factory at Pilcher's Farm, Lester Manor.

CLAYWORKING PLANTS

Ala., Birmingham.—Tile.—W. F. Tibbets of Mobile is reported as contemplating erection of plant to manufacture floor and roofing tile.

COAL MINES AND COKE OVENS

Ark., Huntington.—Phoenix Mining Co., capital \$10,000, incptd. by L. E. Lake, E. G. Lake, A. W. Jasper and C. A. Beggs.

Ky., Richardson.—East Kentucky Coal Co., 317 Fisher Bldg., Chicago, incptd.; capital stock, \$500,000; C. A. Gent, Pres.; B. E. Simon, V.-P.; H. L. Jones, Secy.-Treas.; all of Chicago; as lately noted, will improve and develop Crystal Block property, 2351 acres; also operate leased tract of 1500 acres at Ivel.

Okla., Henryetta.—Fursman Coal Co., capital stock \$5000, incptd. by W. H. Fursman and others.

W. Va., Bramwell.—Cooper Pocahontas Coal Co., capital \$75,000, incptd. by E. Cooper, D. H. Thomas and W. H. Thomas of Bramwell, W. B. Honaker of Matoaka, W. Va., and J. G. Thomas of Mullens, W. Va.

CONCRETE AND CEMENT PLANTS

Fla., Tampa.—Concrete Products.—Tampa Hydro-Stone Mfg. Co., 401 American National Bank Bldg., purchased machinery to mfr. hydro-stone and concrete products. (See Miscellaneous Factories.)

COTTON COMPRESSES AND GINS

Ala., Piedmont.—Piedmont Gin & Seed Co., capital stock \$12,000, incptd. by J. R. Barlow and others.

Ark., Lewisville.—People's Gin Co., capital \$6000, incptd. by W. A. Hanse, Chas. McClen-don, W. D. Harrell, R. E. Lee and others.

Tex., Fargo.—E. Hoffman will rebuild gin wrecked by explosion.

Tex., Floresville.—Houston-Lichnovsky Gin Co., capital stock \$20,000, incptd. by S. V. Houston, V. Lichnovsky and R. L. Eschenburg.

DRAINAGE SYSTEMS

Ark., Crawfordville.—Crittenden County Drainage Dist. No. 3 (W. W. Sweetson, Pres.), let contract W. S. Coleman & Sons, Paragould, Ark., to construct drainage system, comprising 75 mi. canals, 40 to 60 ft. bottom width, 6 to 8 ft. deep, requiring 2,500,000 cu. yds. excavation; estimated cost,

\$225,000; Engr., W. H. Newsom, Wynne. (Call for bids lately noted.)

La., West Monroe.—City, N. G. Tippet, Mayor, will expend \$16,000 on lately-noted electric-light plant and water-works enlargement; opens bids November 14; erect 34x55 ft. brick building; capacity of plant, 75 H. P.; install crude-oil engine; 10,000-gal. oil-storage tank; plans by C. A. Reece, Shreveport, La. (See Machinery Wanted.)

Mo., Lewis County.—Fabius Drainage Dist., comprising 22,000 acres swamp and overflow lands on Mississippi River in Lewis and Marion counties, will issue bonds for reclamation; estimated cost \$300,000; John H. Nolen, Land Reclamation Commr., Jefferson City, Mo.

Mo., New Madrid.—St. John Levee and Drainage Dist. contemplates extensions; district comprises 315,000 acres in New Madrid and Mississippi counties; several hundred mi. canals and 50 mi. levees previously constructed; entire proposition to involve 970,000 cu. yds. floating dredge, 12,000,000 cu. yds. drag line, 200,000 cu. yds. suction dredge and 6,200,000 cu. yds. levee work, etc.; final completion estimated to cost \$3,750,000, excepting collection ditches on lands below overflow and pumping plant; Engr., Miller Engineering Co., Little Rock, Ark.

N. C., Durham.—Southern Power Co., Charlotte, N. C., will build auxiliary steam-driven electric plant reported to cost about \$500,000; develop 10,000 H. P. for electrical transmission; construction to include reservoir covering 3 acres.

Okla., Pryor.—City Light & Ice Co., capital stock \$50,000, incptd. by G. C. Kissell of Pryor, W. J. O'Brian of Durant, Okla., and J. R. Cullinane of St. Louis, Mo.

Tenn., Newport.—City voted \$25,000 bonds for improvements as follows: \$5000 to equip electric-lighting system, \$5000 to pave streets and sidewalks, \$5000 to connect with second spring for water supply and extend system, and \$10,000 for outstanding indebtedness. Address The Mayor. (Lately noted.)

Tex., Houston.—Harris County Drainage Dist. No. 7 will construct drainage canals; Commrs. of Dist., C. L. Anderson, Chmn., Aldine, Tex., will receive bids until Nov. 21 at office of County Judge, Courthouse, Houston; successful bidder to purchase entire bond issue of \$140,000; J. S. Burk, Engr., 1213 Walker Ave., Houston. (See Machinery Wanted.)

Tex., McKinney.—City let contract to J. E. Cooper, McKinney, at \$4900 to construct building for light and water plant; 88x56 ft. and 22 ft. high; concrete foundation reinforced with steel; concrete floors; brick walls; tarred gravel roof supported by timbers; fireproof walls separating boiler, pump and air-compressor room from electric-light plant.

ELECTRIC PLANTS

Ark., Leslie.—Leslie Ice, Lighting & Power Co. and Lenker Hub Co. have consolidated as Leslie Ice, Lighting & Power Co. with \$48,000 capital; Ed Mays, Mgr.

D. C., Washington.—Adams Express Co. (main office, Washington Terminal) is reported to install electric power plant at 2d and I Sts. N. E.; cost \$15,000.

Ga., Helena.—City defeated lately-noted bond issue for electric-light system; J. S. McLaughlin, Mayor.

Ga., Lagrange.—Columbus Power Co., Columbus, Ga., contemplates building substation with capacity of 600 K. W. to supply electricity in Lagrange; construct short branch from present distribution line at Lagrange to connect with Lagrange substation; erect 2 sectionalizing switch towers at Lagrange and West Point.

Ga., Moultrie.—Water & Light Co., J. M. George, Supt., contemplates installing 400 H. P. engine and 312 K. V. A. 60-cycle 250-volt generator.

Ga., Rockmart.—Water and Light Dept., J. B. Cooper, Supt., contemplates installing 200 H. P. 4-valve engine, 125 K. V. A. generator (direct connected), with exciter and switchboard panel; expects to purchase transformers and line material for city motor service.

Ky., Cadiz.—A. P. and Stanley White will build electric-light plant.

Ky., Peble.—Town will not construct electric-light plant. (Lately reported as voting bonds.)

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

Ky., Princeton.—City votes in November on \$15,000 bonds to build electric-light plant. Address The Mayor.

Miss., Jackson.—M. L. Culley, City Engr., prepared 2 sets of plans for municipal light and power plant; first plan calls for location of plant in city at cost \$165,000; other plan, to locate power-house at pumping station of water-works, and cost \$155,000; both plans include estimate of \$29,000 for underground wiring in business section; vote on bonds. (Lately noted.)

Mo., Cassville.—Ingalls Stone Co. is reported to build power-house; develop 250 to 300 H. P.

S. C., Orangeburg.—City contemplates improvements to electric-light plant estimated to cost \$10,000; install additional boilers.

Tenn., Dresden.—City votes Nov. 21 on \$27,000 bonds to construct electric-light plant and water-works. Address The Mayor.

Tenn., Portland.—Franklin Electric Light & Ice Co., Franklin, Ky., contemplates constructing transmission line to Portland, 12 miles.

Tex., Cleburne.—City Com. let contract to erect building for light and water plant; brick construction; cost about \$5000.

W. Va., Newburg.—City will construct electric-light system to cost \$3000; let contract for equipment. Address The Mayor.

W. Va., Newburg.—City let contracts to install street-lighting system. Address The Mayor.

FERTILIZER FACTORIES

Md., Baltimore.—Hubbard Fertilizer Co., 802-805 Keyser Bldg., will rebuild portion of plant and warehouse at Clinton St. and 5th Ave., Canton, reported burned at loss of \$100,000 to \$125,000.

Md., Baltimore.—Hubbard Fertilizer Co., Keyser Bldg., will rebuild factory and warehouse, reported burned at loss of \$100,000 to \$125,000, on water front; has not determined any details.

Md., Curtis Bay.—Atlantic Fertilizer Co. (Baltimore office, 36 Stock Exchange Bldg.) completed plans for plant at Curtis Bay; building to be 157x238 ft., either of reinforced concrete, frame or corrugated iron; for further particulars address Swift & Co., construction department, Chicago. (Previously noted.)

FLOUR, FEED AND MEAL MILLS

Ala., Albertville.—Jack Morgan is reported as planning to install flour mill.

Ala., Attalla.—Brown Milling Co., A. Brown, Pres., is reported as contemplating erection of flour mill.

Ga., Fort Gaines.—H. T. Killingsworth will install corn and feed mills in buildings at site of water-power plant; power plant and transmission machinery already erected; lately noted. (See Machinery Wanted.)

Mo., Booneville.—Sombart Milling Co., capital \$50,000, inceptd. by Chas. A. and Fred Sombart and Chas. L. Vollrath.

S. C., Dentsville.—J. N. Harling is reported as to build roller flour mill.

FOUNDRY AND MACHINE PLANTS

Ky., Greenville.—Machine Shop.—W. G. Duncan Coal Co. will construct building and install equipment for machine shop; Joseph & Joseph, Architects, Louisville, Ky.

N. C., Charlotte.—Welding.—Carolina Welding Co., capital stock \$25,000, inceptd. by Fred H. White, C. M. Setzer and A. C. Butler.

Okl., Sand Springs.—Engines, etc.—Sand Springs Machine Co. (lately noted inceptd., capital stock \$75,000) organized; R. M. Halweg, Pres.; Geo. B. Swope, V.-P.; D. G. Elliott, Secy.-Treas.; F. J. Rosgen, Supt.; buildings cost \$7000, and contract previously noted as let by "Sand Springs Mfg. Co.," mfrs. engines, pump jacks, auto jacks, Perfection ventilators and oil field products; need equipment. (See Machinery Wanted.)

Tex., El Paso.—Machine Shop.—Perry Kirkpatrick Co. will build machine shop; frame construction.

Tex., Sipe Springs.—Blacksmith and Machine Shop.—Geo. Gaskins will rebuild business building for blacksmith and machine shop.

GAS AND OIL ENTERPRISES

Ky., Louisville.—Citizens' Oil Co., capital stock \$750,000, inceptd. by Wiley H. Taylor, Geo. G. Fetter, C. B. Blake, A. F. Blake and others; consolidates Citizens' Co. and Hawesville Oil, Gas & Development Co.; developing oil properties in Kentucky and Illinois; office in Lincoln Bank Bldg.

La., Shreveport.—Caddo Thousand-Acre Oil Co., capital stock \$80,000, inceptd. to acquire and develop oil, gas and mineral rights; W. D. Chew, Pres.; W. L. Price, Secy.-Treas.

La., Shreveport.—Sodus Oil & Gas Co., capital stock \$15,000, inceptd.; W. W. Blocker, Pres.; Dudley Crawford, Secy.

La., Vinton.—Gulf Coast Oil Co., capital stock \$15,000, inceptd.; acquired lease in Vinton oil field; Jos. R. Gringras, Pres., Alexandria; John G. Gray, V.-P.; Louis P. Selsa, Secy.-Treas., both of Lake Charles.

Okl., Oklahoma City.—Paymaster Oil Co., capital stock \$50,000, inceptd. by O. G. Bantley and J. F. Dingee of Oklahoma City and Sam E. Bell of Tulsa.

Okl., Oklahoma City.—Powhatan Petroleum & Gas Co., capital stock \$10,000, inceptd. by J. F. Rumsey, O. C. Black and others.

Okl., Oklahoma City.—Bant-Bell Oil Co., capital stock \$50,000, inceptd. by O. G. Bantley and Kelley M. Roach of Oklahoma City and Sam E. Bell of Tulsa.

Okl., Skiatook.—Famous Oil Co., capital stock \$20,000, inceptd. by C. E. Holtslaw and L. A. O'Brien of Skiatook and H. E. Koester of Dewey, Okla.

Okl., Sulphur.—Cosmos Oil & Gas Producers, capital stock \$12,000, inceptd. by E. L. Newman, J. T. Slover and E. T. Robinson.

Okl., Tulsa.—D. C. & B. Drilling Co., capital \$10,000, inceptd. by C. B. Davis, C. W. Connelly and V. K. Davis.

Okl., Tulsa.—Southern Oil Corp., capital \$25,000, inceptd. by J. M. Greene and F. S. Ayers of Afton, Okla., and R. S. Ayers of Shreveport, La.

Tex., Cuero.—Gas Plant.—Cuero Commercial Club and others are promoting installation of gas-generating plant and distributing system.

PROPOSAL ADVERTISEMENTS IN THIS ISSUE

PUBLISHED ON PAGES 66

In order to secure best bids from leading engineers, contractors and investment houses, the proposal advertising columns of the Manufacturers Record are invaluable.

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When Proposal Advertisements cannot be sent by mail in time to secure insertion before date for opening bids, please wire advertisement copy by Night Letter.

Proposal Advertising must reach us not later than 9 A. M. Wednesday for publication in issue of that week.

Tex., Iowa Park.—Oil Refinery.—Wichita Valley Refining Co., capital stock \$30,000, incorporated by C. J. Ferguson, J. F. Boyd and J. A. Kemp.

Tex., San Angelo.—San Angelo Oil & Gas Co., capital stock \$30,000, inceptd. by W. A. Guthrie, J. Y. Rust and B. B. Hall.

W. Va., Charleston.—Goshorn Oil Co., capital stock \$50,000, inceptd. by L. G. Davis, M. Williamson, J. N. Carnes and others; proposes to operate in Union Dist., Clay county.

ICE AND COLD-STORAGE PLANTS

Ark., Harrison.—Harrison Ice & Storage Co., capital \$25,000, inceptd.; N. W. Fellows, Pres.; W. H. Fellows, V.-P.; R. M. Fellows, Secy.-Treas.; will operate plant (noted in April) built and equipped.

Fla., St. Petersburg.—Citizens' Ice & Cold Storage Co., Horace Williams, Mgr., will build ice plant at 9th St. and 2d Ave.; daily capacity, 25 tons; fireproof construction.

Ga., Macon.—Neuhoff Abattoir & Packing Co., Henry Neuhoff, Pres., Nashville, Tenn., contemplates building cold-storage plant, abattoir and stockyards; cost about \$25,000.

Ky., Grayson.—J. A. Bagby, owner local electric-light plant, contemplates installing ice plant of about 5 tons capacity.

Ky., Lexington.—W. T. Sistrunk & Co., 263 N. Vine St., let all contracts for cold-storage plant and equipment lately noted; 2-story, 120x16-ft., \$10,000 ordinary-construction building; automatic refrigeration and cold-storage machinery.

Mo., Pacific.—Pacific Refrigerating Co., capital stock \$30,000, inceptd. by W. A. Powers, Jas. Booth and J. W. Morrill; will install plant.

Okl., Pryor.—City Light & Ice Co., capital stock \$50,000, inceptd. by G. C. Kissell of Pryor, W. J. O'Brien of Durant, Okla., and J. B. Cullinane of St. Louis, Mo.

Tenn., Johnson.—Clinchfield Ice & Coal Co. (lately noted inceptd., capital stock \$30,000) organized; J. W. Franklin, Pres.; Mr. Black,

V.-P.; W. W. Romine, Secy.-Treas.; receiving bids on 2-story 100x48-ft. brick building; machinery purchased; capacity 30 tons ice per 24 hrs. (See Machinery Wanted.)

Tex., Dallas.—C. R. Jones and associates, care of People's Ice Co., purchased 50-ton ice plant through Robt. W. London, Agt. for Frick Co., Waynesboro, Pa. (Mr. London lately reported to build 50-ton plant.)

Tex., San Antonio.—Mission Ice & Fuel Co., Rivas and San Marcos Sts., will construct ice-storage vault and additional improvements; bids received at office Leo M. Dellmann, Archt., until Nov. 27.

Tex., Walnut Springs.—Walnut Springs Ice & Cold-Storage Co., capital stock \$10,000, inceptd. by J. R. Carlton, L. R. Whiteley and N. Green.

IRON AND STEEL PLANTS

Ky., Newport.—Rolling Mill.—Newport Rolling Mill has drawn fires and will undertake improvements; let contract McClintick-Marshall Construction Co., Pittsburgh, to construct galvanizing mill, replacing present wooden structure; iron, with glass skylight and electric cranes.

LAND DEVELOPMENTS

Fla., West Palm Beach.—O. A. Jones, Indianapolis, Ind., will develop tract for residential purposes; construct granite sidewalks; Chas. P. Adams in charge.

Ky., Beattyville.—Lee County Land Co. organized; G. W. Gourley, Pres.; Thos. Pryse, Treas.; H. D. Parrish, Secy.; has 3000 acres in Lee county for development. (Lately noted inceptd., \$6000 capital.)

Ky., Covington.—Los Angeles Heights Land Co., 416 Scott St. (lately noted inceptd., capital \$10,000), organized; E. L. Van Winkle,

Ky., Junction City.—Junction City Lumber Co., capital \$25,000, inceptd. by W. A. Reynolds, Mary W. R. Caskey and J. H. Sowder.

Mo., Canton.—Canton Planing Mill Co. organized; E. M. Carson, Pres.; W. B. Graves, V.-P.; W. T. Graves, Secy.-Treas.; inceptd. with \$30,000 capital (not \$18,000, as lately stated); mfrs. mill work.

Tex., Houston.—W-S Lumber Co., capital stock \$5000, inceptd. by J. J. Settegast, Leon Settegast and Hugh Wilkin.

Va., Honaker.—Honaker Lumber Co. will rebuild plant reported burned at estimated loss of \$100,000.

W. Va., Piedmont.—Dixon-McHenry Lumber Co. inceptd. by Geo. G. Dixon, M. B. McHenry and others.

MINING

Georgia—Manganese.—Dr. Felix I. Tarant, Birmingham, Ala., and others purchased mineral rights on manganese ore land embracing 700 to 800 acres in Georgia and will develop.

Ky., Bowling Green.—Limestone.—Waller Bros. of McDermott, O., are reported to have leased property of Victoria Limestone Co. and of Peerless Bowling Green Limestone land; also purchased tract on Barren River, near Bowling Green, from D. Y. Johnson of Nashville, Tenn.

Ky., Paducah.—Clay.—Paducah Clay Products Co., Lexington, Ky., organized; A. O. Hodges, Pres.; A. Trollet, V.-P.; Thos. L. Walker, Secy.-Treas.; mines ball clay; 60 tons daily capacity. (Previously noted, under Clayworking Plants, as purchasing clay land and to erect pottery.)

Okl., Bromide.—Iron.—Galbreath Iron & Mining Co. (lately noted inceptd., capital \$25,000, by Robt. Galbreath and others) will develop manganese and hematite iron ores; at present will mainly prospect further the various mines now but partially developed.

S. C., Breezewood.—Manganese.—W. H. Beatty and J. F. Edmonds, Abbeville, S. C., leased 100 acres containing deposit of metallic manganese; will develop (at present) on small scale. (Lately noted at S. C., Abbeville.)

Tex., Waco.—Gravel.—Potts-Moore Gravel Co., 1412 Amicable Bldg., has installed lately-noted equipment, including Marion steam shovel, Monaghan drag line, locomotive, loading track, etc.

MISCELLANEOUS CONSTRUCTION

Ark., Horatio.—Levees.—Sevier County Court, De Queen, Ark., will be petitioned to organize district to build 37-mi. levee, costing about \$59,200, along Little and Cossatot rivers; proposed district will contain 34,000 acres and extend 25 mi. along Little River and 25 mi. along Cossatot River; estimated to be 15 mi. of channel charges, estimated to cost \$60,000 additional; levee to be 4 ft. or more in height.

Fla., Lake Worth.—Sea Wall, etc.—City contemplates extensive improvements to lake frontage; probably at first construct about 500 or 600 ft. sea wall and fill in 2 or 3 acres for park; plans 2 yacht harbors and lake shore drive; also baseball park; G. Sherman Childs, City Engr.

Ga., Atlanta.—Retaining Wall.—Georgia School of Technology will construct retaining wall on West North Ave.; cost \$12,600; contractors, H. J. Carr & Co.

Ga., Macon.—Underpass.—Central of Georgia Ry., C. K. Lawrence, Ch. Engr., Savannah, is reported to construct reinforced concrete underpass from intersection of Plum and 5th Sts. to intersection of Plum and 6th Sts.; estimated cost \$74,000.

Md., Jones Landing (not a postoffice).—Wharf.—Maryland, Delaware & Virginia Ry. Co., Pier 1, Pratt St., Baltimore, let contract Geo. D. Turner, Prince Frederick, Md., to construct frame and piled wharf and pierhead extending 300 ft. into Patuxent River at Jones Landing, St. Mary's county; cost \$3000; materials supplied by contractor. (Lately noted under Baltimore.)

Miss., Bay St. Louis.—Sea Wall.—Sea Wall Com. let contract John Anderson of Abbeville, La., to fill in behind sea wall.

Miss., Vicksburg.—Levee.—Government let contract John R. Scott, St. Louis, Mo., at \$250,000 to construct 2,000,000 yds. levee enlargement on Arkansas River in Third Dist.; Maj. J. R. Slattery, Engr., Vicksburg.

Miss., Vicksburg.—Levees.—Mississippi River Com. allotted \$1,084,000 to Third Mississippi River Engrs. Dist. for improvements to include levee construction, extensions of revetment work at Greenville and Grand Lakes, etc.; Maj. J. R. Slattery, Engr.

N. C., Spray.—Steam Power Plant.—Thread Mills Co. (controlled by Marshall Field & Co.,

Chicago) has had plans and specifications completed for previously-noted steam power plant reported to cost \$150,000, but has not let contracts; F. P. Sheldon & Son, Engrs., Industrial Trust Bldg., Providence, R. I.

Tenn., Memphis—Levees.—Mississippi River Com., First and Second Dists., Room 20 Custom-house, will construct 3,341,000 cu. yds. levee work in Upper and Lower St. Francis and White River Levee Dists.; bids until Nov. 2; E. M. Markham, Maj., Engrs. (See Machinery Wanted).

Tex., Austin.—City will expend \$8000 to construct about 700 ft. reinforced concrete retaining wall with walk along same and railing at outside edge; plans provide for floating wharf, 50x30 ft., and automatically adjusting stairways; also site for pavilion on water's edge with 2 semi-circular bays, 22 ft. in diam.; Geo. S. Iredell, Engr., Austin; bids opened Oct. 26. (Lately noted.)

Tex., Galveston.—Canal.—Anahuac Canal Co., capital stock \$100,000, inctpd. by Thos. S. Ellis, L. R. Miller and John Wooten.

Tex., Houston.—Wharf.—City postponed date of opening bids from Oct. 26 to Oct. 30 to construct wharf and warehouse; Ben Campbell, Mayor. (Further facts lately noted.)

Tex., San Antonio.—Heating Plant, etc.—Bexar County Comms. let contract Wm. G. Schwirth at \$10,300 to install heating plant in county courthouse and to Martin Wright at \$2288 for electric wiring.

Tex., Magnolia Park, P. O. at Houston—Wharf.—Magnolia Park Land Co. let contract to construct wharf at foot of Wayside Drive in Central Park; length of wharf and bulkhead, 80 ft.; creosoted piling; plank flooring.

Va., Richmond.—Arch and Retaining Walls. City asks bids until Nov. 6 to construct arch under Broad St. with reinforced concrete retaining walls of approaches; lately noted; Chas. E. Bolling, City Engr. (See Machinery Wanted.)

MISCELLANEOUS ENTERPRISES

Ala., Birmingham.—Taxicabs.—Whitman Taxicab Co., capital stock \$2000, inctpd. by F. Y. Whitman, Prest.; Louis Berkowitz, V.-P., both of Birmingham; L. R. Tomlinson, Secy.-Treas., Milwaukee, Wis.

Ala., Enfield.—Cleaning Plant.—O. L. Hayes will install cleaning plant.

Ala., Mobile.—Electric Supplies.—D'Olive Electric Co., capital \$2000, inctpd.; Chas. S. Mode, Prest.; Harry N. Alter, V.-P., both of Chicago; Louis O. D'Olive, Secy., Treas. and Gen. Mgr., Mobile.

Fla., Kissimmee.—Malloy-Lesley Cattle Co., capital stock \$50,000, inctpd. to develop stock farm; E. D. Malloy, Prest.; E. L. Leslie, V.-P.; Lewis O. Bryan, Secy.

Fla., Miami.—Garbage Disposal Plant.—City will build previously-noted garbage and refuse disposal plant; 2 tons per hr. capacity; bids until Nov. 19; John R. Baylis, Engr., 704 Farley Bldg., Birmingham, Ala. (See Machinery Wanted.)

Ga., Augusta.—Contracting.—Palmer-Spivey Contracting Co., capital stock \$10,000, inctpd. by L. E. Palmer, W. Spivey and W. O. Hallman.

Ga., Augusta.—Contracting.—Palmer-Spivey Contracting Co., capital stock \$10,000, inctpd. by L. E. Palmer, W. T. Spivey and W. O. Hallman.

Ga., Macon.—Abattoir, etc.—Neuhoff Abattoir & Packing Co., Henry Neuhoff, Prest., Nashville, Tenn., contemplates building abattoir, cold-storage plant and stockyards; cost about \$25,000.

Ga., Macon.—Amusement Park.—Coney Island Amusement & Realty Co., Coney Island, N. Y., leased Crump's Park, comprising 27 acres, and will remodel; remodel theater and erect various buildings and amusements, including roller coaster, toboggan slide, circle swing, roller skating rink, dancing pavilion, natatorium, etc.; main entrance to be 40 ft. deep with ice-cream pavilion on top; R. F. Jeffereys, Landscape Archt., will be in charge.

Ky., Newport.—Grain Elevator.—Geo. Keller will build addition to grain elevator.

Miss., Columbus.—Crematory.—City let contract Nye Odorless Crematory Co., Macon, Ga., to build crematory to cost \$4500.

Mo., Kansas City.—Publishing.—Pioneer Publishing Co., capital \$500,000, inctpd. by Raymond G. Barnett, Roy K. Deltrich and Geo. D. Mellrath.

Mo., Kansas City.—Cattle.—Porterfield Cattle Co., capital \$35,000, inctpd. by Carl E. Porterfield, Henry Sloan and R. J. Flick.

Mo., St. Louis.—Cleaning Plant, etc.—Reliable Rug Renovating Co., capital stock \$2000,

inctpd. by Edgar R. Simpson, J. Mountford Aull and Frank R. Martin.

S. C., Rock Hill.—Abattoir.—John T. Peay contemplates building abattoir; brick; 3 rooms.

Tenn., Nashville.—Publishing.—Lowe-Baird Publishing Co., capital \$10,000, inctpd. by E. T. Lowe, Sr., J. H. Baird, Stanley F. Horn and others.

Tex., Aspermont.—Printing.—J. Rector Ward will rebuild printing plant; erect 18x30-ft. \$800 mill-construction building; cost of machinery \$1000. (Star Printing Co.'s plant lately noted burned.)

Tex., Corpus Christi.—Crematory.—City will build garbage crematory to cost \$20,000; City Clerk invites bids until Nov. 31.

Tex., Fort Worth.—Stone Crushing.—Fort Worth Crushed Stone Co., capital stock \$50,000, inctpd. by J. T. Hughes, C. K. Bardin and H. E. Cummings.

Tex., Llano.—Publishing.—Judge A. H. Willbern and others will establish plant to publish weekly newspaper; will purchase machinery and equipment estimated to cost \$2500.

Tex., Victoria.—Transfer.—Union Transfer Co., capital stock \$4000, inctpd. by W. E. Franz, J. W. Sample and B. H. Barnes.

Va., Victoria.—Lithia Water.—Victoria Lithia Water Corp., capital stock \$50,000, inctpd.; J. A. Banks, Prest.-Treas.; J. I. Banks, Secy.

MISCELLANEOUS FACTORIES

Ala., Anniston.—Marble.—Anniston Marble & Vault Co., 123 E. 10th St., capital stock \$10,000, inctpd.; W. E. Box, Prest.; W. E. Smith, V.-P.; M. O. Fornely, Secy.-Treas.; will operate plant to mfr. marble and granite monuments, concrete vaults, etc.; will need small polishing machine; other machinery installed. (See Machinery Wanted.)

Ala., Birmingham.—Bottling.—American Liquid Tea & Syrup Co., capital stock \$150,000, inctpd.; Jos. T. Moncrief, Prest.; M. E. Feenker, V.-P.; R. G. Harrison, Secy.-Treas.

Ala., Birmingham.—Medicine.—Paxton-Windham Perfect Healing Co., capital \$2100, inctpd.; E. W. Howell, Prest.; W. X. Paxton, Secy.; B. L. Windham, Treas.

Ala., Birmingham.—Toilet Articles.—Boyd Mfg. Co., capital stock \$3000, inctpd.; C. N. Boyd, Prest.; A. G. Brown, V.-P.; Chas. N. Brown, Secy.-Treas.

Ala., Birmingham.—Moving-picture Supplies.—National Moving-Picture Supply Co., 5 Woolworth Bldg., 3d Ave. and 19th St., capital stock \$5000, inctpd.; W. C. Samuel, Prest.; Sam D. Pelham, V.-P.; C. P. Pelham, Secy.-Treas.

Ala., Birmingham.—Tar Products.—American Tar Products Co., 208 S. La Salle St., Chicago, Ill. (lately noted as having contracted for Birmingham plant), was inctpd. with \$5,000, 600 capital stock; A. T. Hert (Prest. American Creosoting Co. and Federal Creosoting Co.), Louisville, Ky., Chrmn. of Directors; S. H. Bingham, Prest.; Thos. B. Taylor, Secy.-Treas.; both of Chicago; acquired business of Anglo-American Tar Products Co. (foreign and domestic creosote oils), Louisville; American Co. is constructing tar refineries at St. Louis (noted in March as by Anglo-American Tar Products Co.), at Youngstown, O., and lately-noted plant at Birmingham; planning additional plants at Buffalo, etc.; has import, storage and distribution stations at New York and New Orleans, and connections with England and Belgium.

D. C., Washington.—Yeast.—Corby Co., 24th and Channing Sts. N. E., will repair 4-story factory building; cost \$3500.

Fla., Tampa.—Candy.—John B. Erit of Carthage, N. Y., is reported as contemplating establishment of candy factory.

Fla., Tampa.—Artificial Stone, etc.—Tampa Hydro-Stone Mfg. Co., 401 American National Bank Bldg. (P. O. Box 762), J. L. Roumillat, Prest., purchased machinery to mfr. hydro-stone and concrete products; lately noted inctpd., \$20,000 capital. (See Concrete and Cement Plants.)

Ga., Atlanta.—Carburetors.—Tatom Carburetor Co., capital stock \$100,000, inctpd. by F. C. Myers, F. A. Seegar, I. I. Tatom and others.

Ga., Atlanta.—Trunks, etc.—Atlanta Mfg. & Investment Co., capital stock \$10,000, inctpd. by M. M. Davies, W. O. Foote and Wm. C. McKemie.

Ga., Valdosta.—Candy.—John B. Erit of Carthage, N. Y., is reported as contemplating erection of candy factory.

Ky., Louisville.—Batteries.—Kentucky Revivo Battery Co., capital stock \$200,000, inctpd. by H. W. Embury, O. M. Billings and Henry Vurnett.

Ky., Middlesboro.—Medicine.—Middlesboro Medicine Co. will rebuild factory lately noted burned; construct brick and stone building.

Mo., Cartersville.—Hoge Spudder Mfg. Co., capital \$10,000, inctpd. by Chas. L. and Frank Hoge and A. W. Thurman.

Mo., Carthage.—Shoes.—Kaut-Reith Shoe Co., capital \$50,000, inctpd. by Wm. Kaut, Chester F. Reith and Wm. C. Campbell.

Mo., Kansas City.—Parchment Paper.—Waxide Parchment Paper Co., capital \$75,000, inctpd. by R. K. Jamison, Harry S. Banta and H. A. Fratcher to mfr. waxed paper; will occupy building being erected at 404-410 Admiral Blvd.

Mo., Liberal.—Distillery.—Pure Grain Distilling Co., capital stock \$10,000, inctpd. by Wm. Lorenzen, Adolph Nicholson and Theodore Lorenzen.

Mo., St. Louis.—J. L. Howard estate has plans by J. M. Dunham Co., 1011 Chemical Bldg., for factory building; 7 stories and basement; 83x100 ft.; estimated cost \$75,000.

Mo., St. Louis.—Shoes.—Kaut-Reith Shoe Co., capital stock \$50,000, inctpd. by Chester F. Keith, Isaac D. Adams and Wm. S. Campbell of St. Louis and Wm. Kaut of Carthage, Mo.

N. C., Norwood.—Hardware.—Eldon L. Hayes, Cincinnati, O., Mgr. for Ohio, Pennsylvania, Indiana, Illinois and Wisconsin hardware manufacturers, will establish hardware factory; will use electric power; purchased 500 acres for plant site and industrial city; induce other manufacturers to locate and develop townsite to be named "Energy."

Okla., Muskogee.—Klean Klenner Sales & Mfg. Co., capital \$10,000, inctpd. by Wilburn G. Finley of Muskogee, Arley T. Jacobs of Strang and others.

Okla., Sapulpa.—Glass.—Premium Glass Plant Co. will enlarge plant.

Okla., Tulsa.—Paraffine Wax.—Uncle Sam Oil Co., Atchison, Kans., is reported to establish paraffine wax factory.

Okla., Tulsa.—Vending Machines.—Majestic Mfg. & Vending Co. (lately noted inctpd., capital \$10,000) organized; James Egan, Prest. and Treas.; J. B. Dickinson Secy.; continues mfr. of gum-vending machines, etc.; no further equipment needed.

Tenn., Chattanooga.—Ice Plants.—P. R. McCrary, 21 Baldwin St., contemplates establishing plant to mfr. small ice equipments attachable to any refrigerator and operated by electricity or other power; mfr. about 250 lbs. ice daily or more.

Tenn., Chattanooga.—Satin Glass Process Co., capital \$25,000, inctpd. by K. R. Evatt, L. Miller, J. J. Kalwick and others.

Tex., Athens.—Drugs.—Easterwood Drug Co., capital stock \$8000, inctpd. by J. W. Easterwood, J. T. Pattillo and J. S. Easterwood.

Tex., McKinney.—Beverages.—McKinney Bottling Works, A. Craus, Propr., will erect plant building; 2 stories; brick construction; concrete floor; install complete equipment; already has machinery in present plant.

Tex., San Antonio.—Cigars, etc.—Pan-American Tobacco Co., temporary office in Moore Bldg., inctpd. with \$50,000 capital stock; will establish plant to mfr. cigars and cigarettes; Frank H. Braun, Prest.; Wilhelm Webe, V.-P. (Room 9 Chandler Bldg.); F. T. Maldonado, Secy.

Va., Bristol.—Fruit Pickers.—Automatic Fruit Picker Corp., capital stock \$12,000, incorporated; J. G. Nesbit, Prest.; R. T. Marshall, Secy.-Treas., Johnson City, Tenn.

Va., New Castle.—Creamery.—P. V. Jones, Prest. Board of Trade, is interested in promoting erection of creamery.

Va., Richmond.—Toilet Articles.—Cythera Toilet Co., capital stock \$25,000, inctpd.; W. Johnson Farrow, Prest.; F. B. Snyder, Secy.-Treas.

Va., Roanoke.—Medicine.—Lyon Blood Purifier Co., capital \$75,000, inctpd.; G. W. Cocke, Prest., Fishersville, Va.; H. G. Lacy, Secy.-Treas., Roanoke.

Va., Salem.—Marble.—Jos. Read of Roanoke Granite & Marble Co., Roanoke, is reported to build marble works.

Va., South Richmond, P. O. at Richmond.—Creamery.—Chesterfield Co-operative Creamery, capital stock \$15,000, inctpd.; L. S. Thacker, Prest., South Richmond; Oscar Swineford, Secy., Richmond.

MOTORS AND GARAGES

Ky., Paducah.—Automobiles.—Baker Auto Co., capital \$5000, inctpd. by C. N. Baker, N. M. Baker and W. H. Boss.

La., Alexandria.—Electric Vehicles.—Rapides Electrical Vehicle Co., W. W. Brown, Prest. (lately noted inctpd., capital stock \$12,000), is selling company; will market improved transportation machinery, especially for lumber industry; no building or plant at present.

La., New Orleans.—Garage.—Jos. Vaccaro has plans by E. F. Spori for 2-story brick and frame garage.

Md., Roland Park.—Garage.—B. Howell Griswold, Jr., Baltimore, will build one-story brick garage 25x34 ft.; brick construction; cost about \$3000; Contr., Willard E. Harn Co., 213 N. Calvert St., Baltimore; Archt., L. H. Fowler, 317 N. Charles St., Baltimore.

Mo., St. Louis.—Automobiles.—More Automobile Co., capital stock \$15,000, inctpd. by Edward A. More, John B. Strauch, John T. Salisbury and others.

Mo., Kansas City.—Motor Truck Transfer. East Side Motor Truck Transfer & Baggage Co., capital \$2000, inctpd. by A. J. Middleton, E. K. Brown and John O. Schwaner.

N. C., Greensboro.—Garage.—Markham Garage, capital \$1000, inctpd. by R. L. Markham, E. L. Slides and W. M. Combs.

Okla., Cordell.—Automobiles.—Cordell Ford Co., capital stock \$4000, inctpd. by Geo. C. Naden, M. E. Naden and C. R. Lewis.

Okla., Oklahoma City.—Automobiles.—Paige Motor Car Co., capital stock \$8000, inctpd. by J. T. Wheatly, W. H. Crane and J. L. Daniel.

RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, ETC.

Tenn., Dyersburg.—Illinois Central R. R. Co., A. S. Baldwin, Chief Engr., Chicago, decided to defer until next year the construction of lately-noted terminal.

Texas.—Gulf, Colorado & Santa Fe Ry., F. Merritt, Ch. Engr., Galveston, Tex., appropriated \$28,705.68 for various improvements to include: Northern division—\$16,446.49, deep well and equip with machinery at Cleburne; Southern division—\$2672.89, renew bridge with ballast deck trestle; \$4500, install interlocker at Brenham; \$1202.58, additional appropriation for pumps at Brownwood.

ROAD AND STREET WORK

Ala., Centerville.—Bibb county will grade, drain and surface with chert portion of Centerville and Blockton Rd., beginning at end of present State-aid road; expenditure, \$10,542.26; County Comms. receive bids until Nov. 25; W. S. Keller, State Highway Engr., Montgomery. (See Machinery Wanted.)

Ala., Cullman.—Cullman county will grade, drain and surface with slag and chert about 1½ mi. Bremen Rd.; cost \$6542.26; County Comms. receive bids until Nov. 17; W. S. Keller, State Highway Engr., Montgomery. (See Machinery Wanted.)

Ala., Selma.—City will construct 5300 sq. yds. concrete pavement; J. B. Converse, City Engr.; Jamison & Hollowell, Montgomery, Ala., lowest bidder. (Call for bids lately noted.)

D. C., Washington.—Government will grade, construct roads, etc., in grounds around Hygienic Laboratory; bids opened Nov. 10; drawings and specifications obtainable at office of O. Wenderoth, Supervising Archt., Treasury Dept., Washington. (See Machinery Wanted.)

Fla., Jacksonville.—City will construct about 1906 sq. yds. Dolarway pavement, with cement curb, on Boulevard north of 8th St.; bids until Nov. 23; S. C. Harrison, Jr., Chrm. Committee on Public Works. (See Machinery Wanted.)

Fla., Marianna.—City voted \$3000 bonds to improve streets; Paul Carter, Mayor. (Noted in August.)

Fla., West Palm Beach.—Salerno Dist., Palm Beach county, voted \$100,000 bonds for road and bridges; R. H. Rousseau, Chrmn. County Comms., Boynton, Fla.

Ky., Hazard.—Perry county will vote Nov. 3 on bonds for road construction; reported to contemplate expenditure of several hundred thousand dollars. Address County Judge.

Ky., Lexington.—City will construct brick or asphalt paving on W. Short St.; about 380 yds.; bids opened Oct. 26; C. H. Wilkerson, Commr. of Public Works.

Ky., Louisville.—City let contract Henry Bickel Co. at \$10,500 to reconstruct 9th St. from Magazine to Madison St.

Ky., Vanceburg.—Lewis County Comms. let contract Jas. I. Hill to construct 1½ mi. of water-bound macadam road; R. C. Terrell, Roads Commr.

La., Covington.—Board of State Engrs., Highway Dept., 104 New Orleans Court Bldg., New Orleans, let contract to John P. Ken-

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ned, 805 Convention St., Baton Rouge, La., to construct 16½ mi. improved earth highways in St. Tammany parish; includes necessary concrete bridges and culverts; amount available \$30,000; J. L. Wheeler, Resident Engr. (Lately noted at New Orleans, La.)

La., Crowley.—City will construct cement sidewalks; estimated cost \$65,000; bids opened Oct. 27. Address The Mayor.

Md., Baltimore.—City has \$790 available to construct 4000 sq. yds. sheet asphalt paving on McDermid St. from Linwood Ave. to Loney's La.; P. C. Painter, Engr., City Hall, Baltimore; contract (lately noted) let to Baltimore Asphalt Block & Tile Co., 213 Courtland St., Baltimore.

Md., Baltimore.—Paving Com., R. Keith Compton, Chrmn., plans to improve about 80 streets next year, to include Fayette St. from Charles to Paca, and German and Lexington Sts. from Liberty to Eutaw.

Md., Baltimore.—Paving Com., R. Keith Compton, Chrmn., let contract Home Cement Works, Francois N. Comitot, Propr., 2013 N. Charles St., at \$14,424.40 to pave alleys with concrete.

Miss., Greenwood.—City will construct paving, curbing, gutters and storm sewers on Carrollton Ave.; plans and specifications on file; bids opened Nov. 3; R. H. Hicks, City Clerk. (See Machinery Wanted.)

Miss., Gulfport.—Walter A. Phillips, Gen. Mgr. Northern Land Co., 20 Barrett Bldg., Gulfport, is promoting "Dixie Way" highway from Chicago, Ill., to Gulfport, Miss.; road to pass Peoria, Springfield and Cairo, Ill.; Memphis, Tenn., and Hattiesburg and Jackson, Miss., and have eastern and western terminals at Mobile, Ala., and New Orleans, La.; about 1109 mi. 60-ft. wide road, with 20-ft. graded center; parts of the road already completed and other parts under construction.

Miss., Meridian.—Lauderdale County Road Dist. No. 1 will vote Nov. 3 on \$50,000 bonds for road construction; W. R. Pistole, Clerk Chancery Court.

Miss., Vicksburg.—Warren County Supvrs. let contract B. N. Simrall at \$1616 to construct 2-mi. road from Yazoo River bridge to Paxton Landing.

Mo., Joplin.—City will repave Main St. from 1st to 3d with creosoted wood blocks. Address The Mayor.

Mo., Springfield.—City let following contracts to construct sidewalks: Plummer-Adams Co., L. L. Fielder, E. L. Meek & Co., Baron Bros., V. E. Koch and M. H. Southworth.

Mo., St. Charles.—St. Charles county will repair with crushed gravel or limestone macadam and screenings Boun's Lick, Cross State, Salt River and other roads; bids until Nov. 12; Alfred Riske, County Highway Engr. (See Machinery Wanted.)

Mo., St. Joseph.—City let contract Metropolitan Paving Co. to pave Farson St., 26th to 27th St., with asphalt, and Land Paving Co., Edmond St., 2d St. to first alley west, with brick blocks.

N. C., Asheville.—Buncombe County Commissioners have \$50,000 to \$60,000 available to construct 7 mi. bituminous macadam road; 16 ft. wide; bids opened Nov. 6 (extended date); Chas. H. Neal, Engr., Asheville; lately noted. (See Machinery Wanted.)

N. C., Charlotte.—Executive Board is preparing to improve streets as follows: Providence Rd. from Myers Park entrance through Crescent Ave. in Colonial Heights, \$2500; Pineville Rd., \$2500; Beattie's Ford Rd. through Seversville, \$2000; N. Tryon St. between railroad trestles, \$1500; total, \$8500; Jos. Firth, City Engr.

N. C., Winston.—City will construct granolithic sidewalks and probably 8 blocks bitulithic roadways; amount available \$60,000; Gilbert C. White, Engr., Charlotte, N. C. (Lately noted.)

Okla., Bartlesville.—City let contract to Municipal Engineering Co., Oklahoma City, for 3500 sq. yds. of paving on 5 alleys; \$1.38 for brick and 4-in. concrete base, 35 cents for curbing and 35 cents for class A excavation.

Okla., Tulsa.—City let contract F. P. McCormick Construction Co. at \$16,500 to pave portions of Wheeling, Trenton, Elwood, 9th and Detroit Sts.

Okla., West Tulsa.—City will pave 10 blocks at cost of about \$12,000. Address City Engr.

S. C., Charleston.—Sanitary and Drainage Com. will cover Belgian block roadway out of Charleston for about 4 mi. with mixture of asphalt and sand; bids until Oct. 30; Reid Whitford, Engr. (See Machinery Wanted.)

S. C., Clinton.—City, Dr. Jas. R. Copeland, Mayor, contemplates paving public square with brick; probably by contract.

S. C., Lancaster.—City let contract C. W. Requarth Construction Co. of Charlotte to construct 10,000 sq. yds. cement sidewalk; Consit. Engr., H. S. Jaudon Engineering Co., Savannah, Ga.; J. M. Hood, Mayor. (Call for bids lately noted.)

Tenn., Manchester.—Coffee County Court will hold meeting Nov. 2 to consider letting of contract to grade about 50 mi. roadway; John G. Logan, Jr., of Southern Road Construction Co. of Knoxville submitted proposition to grade roads for \$8000.

Tenn., Newport.—City voted \$5000 bonds to construct streets and sidewalks. Address The Mayor. See Electric Plants. (Lately noted.)

Tex., Batesville.—Zavalla County Road Dist. No. 4 issued \$20,000 bonds to improve roads. Address County Commrs.

Tex., Dallas.—Dallas & Southwestern Motorway Co., initial capital \$75,000, inceptd. by G. W. Smithson, Geo. L. Maddis, L. W. Garretson and others; plans construction toll road from point on Red River in Red River county to Del Rio in Val Verde county; about 800 mi.; to connect Dallas, Waco, etc.

Tex., Elctra.—City is reported as contemplating macadamizing main streets. Address The Mayor.

Tex., Magnolia Park, P. O. at Houston.—City votes, probably on Nov. 23, on \$150,000 bonds for street improvements, water-works, etc.; W. J. McKenzie, Mayor. (See Water-works.)

Tex., McKinney.—Collin County Commrs. Court opens bids Nov. 18 to construct 7.6 mi. of McKinney-Cella highway; to include bridges, culverts, 22,000 cu. yds. earth excavation and embankment, 6000 lbs. reinforcing steel, 6000 lbs. steel shapes, etc.; plans, specifications, etc., obtainable from County Engr. (See Machinery Wanted.)

Tex., San Antonio.—Government will construct San Antonio-Austin post road, 71 mi. long by 15 ft. wide; gravel construction; survey practically completed and plans being prepared; invite bids within 5 weeks; cost \$240,000; Government appropriated \$80,000, and Travis, Comal, Hays and Bexar counties contribute \$160,000; Engr. in charge, W. A. Crossland, U. S. Senior Highway Engr., San Antonio; under direction U. S. Dept. of Agriculture, Office of Public Roads, P. St. J. Wilson, Asst. Director, Washington, D. C. (Lately noted.)

Tex., Smithville.—City has \$3000 available to continue street improvements, including grading, rolling, etc.; W. H. Curham, Mayor.

Tex., Sulphur Springs.—City let contract to pave 2000 ft. concrete curbing; Arthur D. Stives, City Engr.

Tex., Temple.—Bell County Commrs. Court, W. E. Hall, Auditor, Belton, will construct streets of brick, concrete, asphaltic concrete or other material; about \$140,000 to be expended; bids until Nov. 13; plans, etc., on file in office of Mr. Hall and of E. A. Kingsley, Engr., City National Bank Bldg., Temple. (See Machinery Wanted.)

Va., Lynchburg.—City let contract to W. T. Jones, Lynchburg, to macadamize Poplar and Lorain Sts. (Lately noted.)

Va., Norfolk.—City let contract Louis Lawson to pave and curb Theford St. from Westover Ave. to Armistead Bridge Rd.; 1400 sq. yds. paving; sheet asphalt on concrete base; combined concrete curb and gutter; W. T. Brooke, City Engr. (Call for bids lately noted.)

W. Va., Charleston.—Board of Affairs let contracts to pave 29 streets, aggregating 64,691 yds., as follows: Atlantic Bitulithic Co., Richmond, Va., bitulithic paving; R. H. Hudson, Atlanta, Ga., asphaltic bitulithic and sheet asphalt; C. M. Scanlon & Co. of Huntington, concrete; Kanawha Brick Co. of Charleston, brick; Fibrid Asphalt Co. of Charleston, wood fiber; work comprises 20,415 yds. asphaltic concrete paving, 17,055 yds. bitulithic, 16,961 yds. concrete, 4615 yds. wood fiber, 3345 yds. brick and 2300 yds. sheet asphalt; G. S. Brown, City Engr., Loewenstein Bldg. (Call for bids lately noted.)

SEWER CONSTRUCTION

Ark., Argenta.—Sewer Improvement Dist. No. 1 sold bonds and again asks bids (for No. 5) on sewer construction; estimated cost \$300,000; Lund & Hill, Engrs., Little Rock, Ark. (See Machinery Wanted.)

Ark., Harrison.—City votes Dec. 22 on \$90,000 bonds to construct sewer system and purchase and enlarge water-works. Address The Mayor.

D. C., Washington.—Comms. District of Columbia, Room 509 District Bldg., invite bids until Oct. 30 to construct sewers; 3900 lin. ft. sewers, 12 in. to 3 ft. in diam. (See Machinery Wanted.)

Fla., Marianna.—City defeated bonds for sewer construction. (Lately noted.)

Fla., Miami.—City let contract J. J. Quinn Co. of Bedford, Ind., at \$122,977.62 to construct 18 mi. sanitary sewers, 8 to 24 in. in diam.; Engr., B. H. Klyce, 52 Real Estate Bldg., Miami. (Lately noted.)

Fla., New Smyrna.—City votes Jan. 12 1915, on \$12,000 bonds to construct sewer system; total cost estimated at \$36,000, property-owners to pay two-thirds. Address The Mayor. (See Water-works.)

Ky., Georgetown.—City votes Nov. 3 on \$20,000 bonds to extend sanitary sewer system; K. Stone, Mayor. (Lately noted.)

Ky., Louisville.—City let contract K. A. Barker, Louisville, at \$15,900 (intely noted as lowest bidder), to construct Locust St. sewer; segment block and vitrified pipe, 39 to 15 in.

Miss., Greenwood.—City will construct storm sewers, etc., on Carrollton Ave.; plans and specifications on file; bids opened Nov. 3; R. H. Hicks, City Clerk. (See Machinery Wanted.)

Mo., Aurora.—City will construct sewer system and purification plant; Engrs., Worley & Black, Kansas City.

Mo., Joplin.—City Com. established East Joplin Sewer Dist. No. 12, to include territory bounded by Valley to Furnace, to Timber, to Valley, to point of beginning. Address The Mayor.

Okla., Tulsa.—City will construct sanitary sewers in Dist. No. 14; interior diam. of sewer 8 in.; bids until Nov. 5; T. C. Hughes, City Engr. (See Machinery Wanted.)

Okla., Tulsa.—City let contract C. O. and H. Frye, Tulsa, to construct 8-in. lateral sewers, Dist. 94-95; cost about \$15,000; T. C. Hughes, City Engr. (Bids lately noted.)

Tenn., Memphis.—City will construct sanitary sewer on 4th St. from Market to Monroe Ave.; 3340 lin. ft. 24-in. pipe, 450 lin. ft. 18-in. pipe, 200 lin. ft. 15-in. pipe, 9550 cu. yds. excavation, 650 lin. ft. tunnel, 89.6 cu. yds. brick masonry in 16 manholes, inverted siphon complete; bids opened Oct. 27; E. H. Crump, Mayor. (See Machinery Wanted.)

Va., Norfolk.—City will receive bids until Oct. 29, instead of Oct. 22, as originally advertised, to furnish and lay sewer and water pipes on Armistead Rd., W. Ghent Blvd., etc.; estimated cost \$5000; W. H. Taylor, Jr., Asst. City Engr.; further facts lately noted. (See Machinery Wanted.)

TELEPHONE SYSTEMS

Fla., Pensacola.—Company organized by Joe Handrop, O. W. Jefferson and others to construct rural telephone system in Bellview section of Escambia county.

Ky., Buckhorn.—Buckhorn Telephone Co., capital \$1800, inceptd. by Jerry Gross, Alfred McIntosh, W. H. Amis and Ed. Amis.

Miss., Meridian.—Cumberland Telephone & Telegraph Co., Geo. Y. Yundt, Chief Engr., Atlanta, Ga., will erect lately-noted exchange; brick building, about 40x90 ft.; cost \$30,000.

Miss., Vicksburg.—Cumberland Telephone & Telegraph Co. (main office, Louisville, Ky.) will erect telephone exchange; 40x40 ft.; brick; cost \$35,000; Geo. Y. Yundt, Engr., Atlanta, Ga. (Lately noted.)

Mo., Blackwater.—Blackwater-Arrow Rock Telephone Co., capital \$2070, inceptd. by E. R. Turley, Wm. Brickner and E. G. Wray.

Okla., Standing Rock.—Standing Rock Rural Telephone Co. inceptd. by W. T. Smith, F. A. Bryant and F. M. Clark.

TEXTILE MILLS

Ga., Lagrange.—Cotton Specialties.—Fuller E. Callaway, Treas. Unity Cotton Mills, and associates engaged Park A. Dallas Co., Atlanta, Ga., as Archt.-Engr. to prepare plans and specifications for mill to mfr. cotton specialties for foreign trade. (Lately noted planning organization of company, capitalized at \$500,000 or more.)

Ga., West Point.—Cotton, Duck, etc.—Lanett Cotton Mills will expend about \$50,000 for additional new machinery lately noted; equipment to include 28 cards with complement of drawing and roving frames; has begun installation.

N. C., Kannapolis.—Cotton Cloth.—Cannon Mfg. Co. will build 100x30-ft. addition to cardroom.

Tex., San Antonio.—Chamber of Commerce interested in organizing company to estab-

lish \$300,000 to \$250,000 cotton mill; plans 5000 to 7500 spindles; \$150,000 to \$175,000 for buildings and machinery; \$50,000 to \$75,000 for working capital; probably 60 to 80 days before bids will be asked; also plans woolen mills; natural gas for fuel.

Tex., Texas City.—Cotton Goods.—Texas City Cotton Mfg. Co., authorized capital \$500,000, inceptd. by E. A. Rynum, A. B. Slack and J. M. Head; plans to build mill; has a Houston office at 302 Scanlon Bldg.

WATER-WORKS

Ala., Georgiana.—City let contract to J. B. McCrary Co., Engr., Atlanta, Ga., to construct lately-noted water-works; cost \$14,000; includes 50x50-ft. brick building, cost about \$1500; deep well; 65,000-gal. steel reservoir.

Ark., Harrison.—City votes Dec. 22 on \$90,000 bonds to purchase and enlarge water-works and construct sewer system. Address The Mayor.

Ark., Tillar.—City Council passed ordinance creating Water Improvement Dist. No. 1 to construct water-works. Address The Mayor.

Fla., Clearwater.—City will expend \$9000 to extend water-works; construct concrete reservoir, 60,000 gals. capacity; drill 2 or 3 wells, lay 7000 or 8000 ft. new main, and install oil engine and air compressor; A. J. Brandon, Supt. of Water-works. (Lately noted.)

Fla., Pensacola.—City let contract to Blount Co., Pensacola, at \$2101.39 to construct walls of reservoir No. 1 for water-works; lately noted planning to reconstruct water-works, etc., increasing capacity about 300,000 gals.

Fla., Marianna.—City voted \$35,000 bonds for water-works and electric-light system; Paul Carter, Mayor. (Noted in August.)

Fla., New Smyrna.—City votes Jan. 12, 1915, on \$63,000 bonds, as follows: \$47,000 for water-works, \$12,000 for sewers and \$4000 for funding present indebtedness; J. B. McCrary Co. of Atlanta, Ga., prepared plans and specifications for water and sewer systems; plans for water system call for two 8-in. flow wells about 1 mi. west of city limits and pipe to 100,000 gal. concrete reservoir near west city limits; pumping station to force directly into distributing system and into 75,000-gal. tank on 75-ft. tower; tank intended to supply water when pumping station is not being operated; property-owners to pay two-thirds of cost of sewer system, cost estimated at \$36,000.

Ga., Augusta.—City will construct coagulating basin at filter plant; Chas. A. Maxwell, Supt. Water-works.

Ga., Columbus.—Water Commrs., John C. Cook, Chrmn., approved plans by J. L. Ludlow, Engr., Winston-Salem, N. C., for water-works improvements, to include pumping station, extension of pipes, etc.; about 15 mi. cast-iron pipe, 4 to 24 in. in diam.; centrifugal pumps, filtration plant, tower and tank, power station, hydrants, gate valves and other appurtenances; bids until Nov. 17; Water Board noted in August to improve water-works system purchased from Columbus Water Supply Co., contemplating ultimate expenditure of \$200,000. (See Machinery Wanted.)

Ga., Helena.—City, J. S. McLaughlin, Mayor, defeated lately-noted bonds for water-works construction.

Ky., Madisonville.—Board of Public Works let contract Lucien Hancock to construct earth dam for reservoir to be connected by pipe line with pumping station of city water-works plant; dam to be 540 ft. long, 15 ft. high and contain 10,000 cu. yds.; \$7500 appropriated; D. W. Gatlin, Mayor.

La., Ibouma.—City will consider installation of filtration plant for water-works. Address The Mayor. (City lately noted to receive bids until Nov. 6 to install 3-in. vertical discharge centrifugal pump, etc.)

La., West Monroe.—City, N. G. Tippitt, Mayor, will expend \$16,000 on lately-noted building of electric-light plant and enlargement of water-works; opens construction bids Nov. 14. (See Electric-Light Plants and Machinery Wanted.)

N. C., Tryon.—City votes Nov. 23 on issuing \$25,000 bonds to construct water-works; E. E. Missilline, Mayor. (Lately noted letting contract for piping, etc.)

Tenn., Charleston.—Charleston Water Co., capital stock \$4500, inceptd. by J. N. Moore, E. A. Edwards, J. L. McClary and others.

Tenn., Dresden.—City votes Nov. 21 on \$27,000 bonds to construct water-works and electric-light system. Address The Mayor.

Tenn., Newport.—City voted \$5000 bonds to extend water system, connect second spring

for water supply, etc. Address The Mayor. (Lately noted.)

Tex., Cleburne.—City Com. let contract to erect building for water and light plant; brick construction; cost about \$5000.

Tex., Cleburne.—Gulf, Colorado & Santa Fe Ry., F. Merritt, Ch. Engr., Galveston, appropriated \$18,446.49 to bore deep well and equip with machinery at Cleburne. (See Railway Shops, Terminals, Roundhouses, etc., under Texas.)

Tex., Electra.—City Commrs. let contract Chicago Bridge & Iron Co. of Chicago at about \$4000 to build 65,000-gal. standpipe for water-works; P. E. Ashworth, City Secy. (Call for bids and further facts lately noted.)

Tex., Magnolia Park, P. O. at Houston.—City votes, probably on Nov. 28, on \$150,000 bonds for municipal improvements, to include water-works and street paving; O'Neill & Griffin, Engrs., Dallas, will prepare plans and estimates for water-works to be submitted within 30 days; water system to include 200,000-gal. reservoir, pumping station, distributing system of 10, 8, 6 and 4-in. pipe, etc.; cost about \$150,000; W. J. McKenzie, Mayor. (Lately noted.)

Tex., McKinney.—City let contract J. E. Cooper, McKinney, to construct 88x56-ft. building, costing \$4900, for water and light plant; brick walls; concrete floors and foundation; tarred gravel roof. (See Electric Plants.)

Va., Norfolk.—City will receive bids until Oct. 29, instead of Oct. 22, as originally advertised, to furnish and lay water and sewer pipes on Armistead Bridge Rd., W. Ghent Blvd., etc.; estimated cost \$5000; W. H. Taylor, Jr., Asst. City Engr.; further facts lately noted. (See Machinery Wanted.)

W. Va., Benwood.—City is considering bond issue to construct water-works. Address The Mayor.

WOODWORKING PLANTS

Ark., Helena.—Veneer.—Arkansas Veneer Co. increased capital from \$40,000 to \$75,000.

Ark., Helena.—Veneer.—Arkansas Veneer Co. increased capital stock from \$40,000 to \$71,000.

Ark., Lake City.—Stave Mill.—Vall Cooperage Co. of Missouri will establish stave mill.

Ky., Louisville.—Veneer.—Southern Veneer Mfg. Co. increased capital from \$50,000 to \$60,000.

La., Cedar Grove.—Box Shucks, etc.—L. G. Nichols of Cotton Valley, La., is reported to establish plant at Cedar Grove to mfr. box shucks and other wood products.

N. C., Mocksville.—Chairs and Tables.—Hanes Chair & Table Co., capital \$25,000, incorporated by J. F. Hanes, J. B. Johnstone and J. W. Cartner; buildings erected; machinery mainly purchased; will install short-log band-saw mill. (See Machinery Wanted.)

Tex., Houston.—Staves.—Houston Stave Co., capital stock \$5000, inctpd. by W. H. Heyman, Chas. Pearson and W. A. Vinson.

Va., Norfolk.—Barrels, etc.—White Barrel & Basket Co., capital stock \$25,000, inctpd.; J. M. White, Prest.; Wilson White, Secy.—Treas.

FIRE DAMAGE

Ala., Albertville.—Marshall county jail. Address County Commrs.

Ala., Dothan.—High School, loss \$20,000. Address Board of Education.

Ala., Gordo.—Davis Warehouse; Snow Cannon's store.

Ala., Montgomery.—Terminal Hotel; White Automobile Co.'s garage; total loss, \$45,000 to \$50,000.

Ala., New Decatur.—B. F. Holmes Furniture Co.'s store on 2d Ave.; loss on building, owned by Mrs. Wm. Scharfentery, \$5000.

Ala., Spring Hill.—Residence owned by Frank R. Smith.

Ark., Argenta.—Meyer Riff's store, 118 Washington Ave.; Joe Inda's pool parlor; Jones Furniture Co.'s store; English kitchen.

Ark., Hamburg.—Henry Stilwell's residence; loss \$5000.

Ark., Heber Springs.—W. J. Short's building, occupied by Short Hardware Co. and P. B. Jackson's furniture store; loss \$6000.

Ark., Mammoth Springs.—Mrs. John Myers' residence.

Ark., Newport.—Claridge Hotel, owned by Mrs. Katherine C. Creighton, Omaha, Neb., loss \$6500; Christian Church (address The Pastor), loss \$14,000.

Fla., Clearwater.—Clearwater Lumber Co.'s lumber yard; estimated loss \$10,000.

Fla., Fernandina.—Steve Chadwick's stable at 4th and Cedar Sts.

Fla., Freeport.—Choctawhatchee Lumber Co.'s lumber dock 1600 ft. long, lumber, etc.; loss \$30,000.

Ga., Atlanta.—S. M. Boynton's residence at 294 Washington St.; loss \$3000.

Ga., Adel.—G. B. Owens' residence; loss \$7000.

Ga., Fort Valley.—R. D. Burden's residence, owned by Homer Bassett.

Ga., Waycross.—Fengle Furniture Co.'s store, building owned by Mrs. J. H. Redding; loss \$15,000.

Ky., Carlisle.—J. H. Martin's residence on Pleasant Springs pike; loss \$5000.

Ky., Carrollton.—J. E. Grobmyer's stable, loss \$12,000; Clem Zaph's bakery.

Ky., Daysville.—R. F. D. from Ferguson.—Gill Malone's residence and barn; loss \$3000.

Ky., Glasgow.—Pedigo & Baker's stable; Logan Pedigo's machine shop and 2 blacksmith shops; loss \$12,000.

Ky., Grassy Creek.—T. J. Day's store; loss \$3000.

La., Bernice.—Stores of Colvin McDonald & Co., loss \$18,000; Caldwell & Son's building, loss \$6000; buildings of Bank of Bernice, C. T. Morton & Son and M. A. Talbot; total loss \$35,000.

La., Crowley.—Mrs. S. A. Emerson's residence; loss \$3000.

La., Edgerly.—Stanley Rodgers' rooming-house; loss \$3000.

La., Homer.—Homer Hardware & Furniture Co.'s warehouse was not burned, as lately reported.

La., Newellton.—Wyoming Plantation cotton gin.

La., Plaquemine.—A. Wilbert's Sons Lumber & Shingle Co.'s drykiln.

Md., Baltimore.—Hubbard Fertilizer Co.'s warehouse and portion of plant, Clinton St. and 5th Ave., Canton; loss \$100,000 to \$125,000; offices, 802-805 Keyser Bldg.

Miss., McHenry.—Public School; J. S. Adkison, Mayor.

Miss., Hattiesburg.—East Jerusalem Baptist Church. Address The Pastor.

Miss., Weir.—J. J. Miller's residence.

Mo., Purdy.—Barry County Gazette printing plant.

Mo., Sedalia.—Dorn & Cloney Laundry Co.'s plant damaged; estimated loss, \$5000.

N. C., Charlotte.—J. S. Squires' residence on Rocky River Rd.; loss \$4000.

N. C., Williamston.—Atlantic Coast Line R. R.'s depot; loss several thousand dollars; E. B. Pleasants, Ch. Engr., Wilmington, N. C.

Okla., Commerce.—Thirty-Acre Mining Co.'s mill; loss about \$30,000.

Okla., Miami.—J. P. McNaughton's farm residence; loss \$12,000.

S. C., Barnwell.—E. F. Woodward's residence in East Barnwell.

S. C., Chester.—Mrs. Maggie Hafner's residence; loss \$5000.

S. C., Laurens.—W. P. Childers & Sons' livery stables; loss \$3000.

S. C., Mallory.—James H. Carabo's store and warehouse.

Tenn., Centerville.—Centerville Ice Co.'s plant, owned and operated by Levi Malugin; estimated loss \$3000.

Tenn., Halls.—Residence of Ike A. Smith, editor of Halls Graphic.

Tenn., Fayetteville.—J. E. Poindexter's residence.

Tenn., Graysville.—Jake Cross' store; building owned by Lester Grimslay.

Tenn., Leapwood.—T. J. Bingham's gin; estimated loss, \$3000.

Tenn., Nashville.—McKay Bros. & Daugherty's store.

Tex., Beyersville.—R. F. D. from Taylor.—M. Bachmeyer's barn; loss \$4000.

Tex., Dallas.—McDougle, Cameron & Webster's store; building owned by Sanger Bros.; loss \$25,000.

Tex., Dallas.—Mrs. D. C. Walker's residence at 2111 Commerce St.; Murphy & Bolanz, agents.

Tex., Dallas.—Residence at 4629-31 Worth St., owned by Max Busch, 4702 Worth St.; loss \$9000.

Tex., Ennis.—E. K. Atwood's residence; loss \$15,000.

Tex., Hillsboro.—Sumner M. Ramsey's residence at 210 Matthew St.

Tex., Houston.—Geo. H. Burdick's residence on Clark St.

Tex., Houston.—Wm. H. Gray's residence at 1307 Welch Ave.; Frank O. Wappler's residence at 1306 Welch Ave.

Tex., Krum.—J. P. Boyd's building; loss \$2500.

Tex., Leander.—Barn on Sunset Ranch, T. E. Carter, Mgr., Mr. Rogers, owner, Houston; loss \$6000.

Tex., Mexia.—Building owned by H. M. Munger and Jackson Bros.; loss \$3000.

Tex., Paint Rock.—Western Gin Co.'s plant; loss \$9000.

Tex., Polytechnic.—Servus Grocery, at 3112 Avenue F; loss \$3000.

Tex., San Angelo.—L. Manire's building.

Tex., San Augustine.—H. C. Rankin's residence, loss \$4000; W. W. Johnson's residence near Steep Creek, loss \$4000.

Tex., Terrell.—A. C. Jackson's residence on Asylum Ave.

Tex., Terrell.—Texas Midland R. R. round-house; estimated loss \$30,000.

Tex., Venus.—Gin, seedhouse and cotton-

house owned by Alvarado Oil Mill of Alvarado, Tex.; total loss \$14,000.

Va., Danville.—E. T. Williams' vulcanizing plant.

Va., Honaker.—Honaker Lumber Co.'s plant; loss about \$100,000.

Va., Montvale.—Dr. S. H. Price's residence; loss \$8000.

Va., Ocean View.—Cottage at 4th and Lake Sts., owned by Robert Hutchinson, Great Bridge, Va.

Va., Petersburg.—Building occupied jointly by Virginia Buggy Co. and Harvey Laundry Co.; loss on building, owned by W. E. Armstrong, \$20,000.

Va., Adamston.—Clarksburg Glass Co.'s main building; estimated loss, \$60,000.

W. Va., Beckley.—Residence of Jailer J. A. Griffith.

W. Va., Vivian.—King Coal Co.'s mine tipple at West Vivian; reported loss, \$50,000.

BUILDING NEWS

BUILDINGS PROPOSED

APARTMENT-HOUSES

Ga., Savannah.—C. G. Rowland will erect 3-story brick building to contain 4 apartments at 414 Hull St.

Ga., Savannah.—J. M. Blaine will convert dwelling at Barnard and Gwinnett Sts. into apartment-house and erect building adjoining to contain 2 or 4 apartments; plans not definite.

Mo., St. Louis.—Betty Piska will erect flat on Minnesota Ave.

Mo., St. Louis.—Jos. Mogler will erect stores and flat on Jefferson Ave.

Mo., St. Louis.—Mrs. Josephine J. Horton will erect flat; 5-room suites; separate heating plants; tiled bathrooms; electric showers, etc.

Mo., St. Louis.—Paul Haanal will erect 2-story tenement-houses at 3700-02 Hebert St. and 3119-21 N. Spring St.; cost \$10,500; construction by owner.

Mo., St. Louis.—Frank S. Neill will erect 4 single flats on Kossuth Ave.; each to contain 4 rooms, tile bath, brick front porch, etc.; cost \$9000; construction by owner.

Va., Norfolk.—R. Randolph Hicks has plans for store and apartment building. (See Stores.)

ASSOCIATION AND FRATERNAL

Ark., Grape.—School Board and Woodmen of the World will erect school and lodge building. (See Schools.)

Ark., Pine Bluff.—Fraternal Order of Eagles will remodel brick building at 204-06 W. Baroque St. for lodge purposes.

Fla., Jacksonville.—Young Men's Hebrew Assn. has plans by Tally & Summers, Jacksonville, for clubhouse; 50x90 ft.; ordinary construction; Carey's prepared roofing; electric lighting; cost \$20,000; address proposals to Neal Finkelstein. (Previously noted.)

Okla., Muskogee.—A. F. and A. M. are reported to erect Mystic Shrine Temple; cost \$50,000.

Tex., Corsicana.—I. O. O. F. receives bids through W. H. Wray, Chrmn. Bldg. Com., 815-16 Busch Bldg., Dallas, until Nov. 11 to erect 2-story fireproof dormitory at I. O. O. F. Home near Corsicana; separate bids for wiring, heating and plumbing; plans and specifications at offices of Lang & Wittich, Architects, Dallas; G. W. Hawkins, Houston; John A. Kee, Fort Worth, and W. W. Clouton, Corsicana.

Tex., San Antonio.—National Masonic Sanitarium Assn., C. A. Soule, Prest., 317 State Bank & Trust Bldg., has plans by Reuter & Harrington, Frost Bldg., San Antonio, for Masonic tubercular sanitarium; dimensions not determined; fireproof; heating, lighting, etc., not decided; cost (without mechanical equipment) \$250,000; lately noted inctpd. with \$50,000 available to acquire site and erect building. (See Machinery, etc., Wanted.)

BANK AND OFFICE

Fla., Lake Wales.—Lake Wales Land Co., E. C. Stuart, Prest., will not, at present, erect bank and office building. (Lately noted.)

Fla., Tampa.—Exchange National Bank will probably let contract about Jan. to erect building; F. J. Kennard, Archt., Tampa. (Previously noted to cost \$60,000.)

Ga., Atlanta.—M. L. Thrower is having plans prepared to reconstruct inner portion of Thrower Bldg. at Mitchell and Pryor Sts.

Ga., Quitman.—K. H. Williams is erecting warehouse and office building. (See Warehouses.)

Ky., Hindman.—Hindman State Bank will erect building; cost \$20,000.

Ma., Macon.—J. D. Smith & Son will rebuild office and store building. (See Stores.)

Tex., Dallas.—Texas & Pacific Ry. Co., C. H. Chamberlin, Chief Engr., is reported to erect 10-story office building to replace present structure.

Tex., Jayton.—First National Bank of Jayton will erect building; bids until Oct. 28; R. C. Stuckey, Archt., Chillicothe, Tex. (See Machinery Wanted.)

W. Va., Morgantown.—Columbus Long and Lucas Engineering Co. is reported to have plans for store and office building for E. M. Everly. (See Stores.)

CHURCHES

Ala., Birmingham.—Thirgood Memorial C. M. E. Church, Rev. W. H. Bell, pastor, has plans by W. A. Rayfield & Co., P. O. Box 649, Birmingham, for building; brick; metal roof; ivory plaster; furnace heat; metal ceiling; cost \$5000; architects will receive bids.

Ark., Clarksville.—Cumberland Presbyterian Church will erect building. Address The Pastor.

Ark., Hot Springs.—Baptist church, Rev. J. P. Henderson, pastor, has plans by W. T. Bailey, Hot Springs, for building; brick; stone trimmings; cost about \$25,000; contract let about Dec. 1.

Fla., Kissimmee.—Bethel A. M. E. Church, Rev. W. W. Session, pastor, will erect building; concrete blocks for same made by K. S. Johnson, Sanford, Fla.

Fla., Sanford.—St. John Baptist Church, Rev. C. J. Smith, pastor, will erect building; concrete block made by K. S. Johnson, Sanford, Fla.

Ky., Louisville.—Maxwell Street Presbyterian Church will erect building; cost \$40,000. Address The Pastor.

Md., Baltimore.—Rev. Clayton H. Ranck, 822 N. Eutaw St., is chairman of committee to erect St. Luke's Reformed Church on Pulaski St.; cost about \$15,000.

Md., Bivalve.—Methodist Episcopal Church will expend \$4000 for improvements. Address The Pastor.

N. C., Nashville.—Nashville Baptist Church has plans by John C. Stout, Rocky Mount, N. C., for building; 1 story and basement; brick; buff brick trimmings; auditorium, to seat 270, separated from Sunday-school by sliding doors.

Tenn., Memphis.—Congregation Children of Israel is reported to receive bids until Nov. 14 to erect temple at Poplar Ave. and Montgomery St.; 2 stories, with basement; brick; terra-cotta trimmings; tile roof; concrete floors; interior finished in gold; Byzantine style; cost \$100,000; Jones & Furbinger, architects, Memphis. (Previously noted.)

Tenn., Nashville.—Belmont Methodist Church will erect brick and stone building; cost \$12,000. Address The Pastor.

Tenn., Nashville.—Grandview Cumberland Presbyterian Church, Rev. W. M. Joiner,

pastor, will erect building on Radnor Ter.; stone foundation; concrete block walls.

Tex., Austin.—First Baptist Church, Rev. W. A. Hamlett, pastor, has plans by C. W. Bulger & Son, Dallas, for building; cost \$50,000. (Lately noted.)

Tex., Galveston.—First Evangelical Lutheran Church, W. D. Puelle, Chrmn. of Building Com., plans to remodel building.

Va., Roanoke.—Christ Episcopal Church will erect building at Franklin Rd. and 10th Ave. Address The Rector.

W. Va., Fairmont.—Central Christian Church, Rev. Clarence Mitchell, pastor, will erect building.

CITY AND COUNTY

Fla., Jacksonville.—Armory.—Duval County Commrs. will erect armory; plans in progress.

Fla., Limona.—City Hall.—City contemplates erecting city hall. Address The Mayor.

Fla., Sarasota.—Jail.—City is having plans prepared for reinforced concrete jail; A. B. Edwards, Mayor.

Fla., St. Petersburg.—Boat Terminal.—City Engineer is preparing plans for boat terminal on south side of municipal pier head; 2 or 3 stories.

La., New Orleans.—City authorized engineering division to prepare plans and specifications for rat-proofing building at St. Ferdinand and Peters Sts.; construct concrete floor, metal line feed bins, etc.; W. J. Hardee, City Engr.

Miss., Bude.—Municipal.—City is reported to have sold \$350,000 bonds for municipal building and schools. Address The Mayor.

Mo., Alton.—City Hall, etc.—City votes Nov. 14 on \$95,000 bonds to erect city hall and \$16,000 bonds for fire department. Address The Mayor.

Mo., Joplin.—Firehouse.—City Com. plans to erect building for fire department in East Joplin; 50x45 ft.; 2 stories; brick.

Mo., St. Joseph.—Farm Buildings.—Buchanan county is reported to vote on \$150,000 bonds for county farm buildings.

Tex., Houston.—Warehouse.—City deferred date of opening bids to erect wharf and warehouse on Houston Ship Channel from Oct. 26 to Oct. 30; Ben Campbell, Mayor. (Lately noted.)

COURTHOUSES

Ala., Andalusia.—Covington County Commissioners meet Nov. 10 to select architect and consider plans for courthouse; lot 150x160 ft.; cost (complete) \$125,000 to \$150,000. (Lately noted.)

Fla., Clearwater.—Pinellas county receives bids until Nov. 14 to alter courthouse; plans and specifications at office of C. W. Welckling, Clerk, Clearwater, and Willis R. Biggers, Archt., Tampa.

Ga., Lincolnton.—Lincoln county voted \$30,000 bonds to erect courthouse. Address County Commrs. (Previously noted.)

Ky., Jackson.—Treasury Dept., Oscar Wenderoth, Supervising Archt., Washington, D. C., opened bids to erect Federal Court and postoffice building. (See Government and State.)

DWELLINGS

Ala., Andalusia.—Dr. L. E. Ray is receiving bids to erect residence at Indian Springs near Andalusia; 10 or 12 rooms and baths.

Ala., Bay Minette.—C. D. Hall will erect 2-story dwelling.

Ala., Birmingham.—J. D. Bollard is reported to erect one-story frame residence at 11th Ave. and 22d St. S.; cost \$3520.

Ala., Foley.—W. J. H. Goetz, Detroit, Mich., will erect bungalow and barn.

Ala., Gadsden.—T. S. Christopher will erect residence.

Ark., Hamburg.—Henry Stilwell will rebuild residence reported burned at loss of \$5000.

D. C., Washington.—G. W. Barkman has plans by W. C. Nichol, Oxford Bldg., Washington, for bungalow on 16th St. Heights.

D. C., Washington.—L. E. Breuninger, 3208 19th St. N. W., has plans by H. L. Breuninger, 3208 19th St., Washington, for 2-story brick dwelling at 1412 Monroe St.; cost \$3500; construction by owner.

D. C., Washington.—Shannon & Luchs have plans by A. E. Landvoigt, 1338 G St. N. W., Washington, for dwelling at 3335 Keokuk St.; 2 stories and basement; 9 rooms and 3 baths; garage to accommodate 2 machines; hollow tile; stucco finish; 28x36 ft.; construction by owners.

D. C., Washington.—W. C. Blundon, 14 Rhode Island Ave. N. W., will erect 7 two-story brick dwellings at 1236-38 C St. S. E.; cost \$7000; construction by owner.

Fla., Arcadia.—Geo. B. Grosvenor of Grosvenor, Lapham & Co., Chicago, is reported to erect bungalow.

Fla., Auburndale.—Dr. W. A. German, Sioux Falls, S. D.; Dr. Kohler, and Mrs. W. A. Sanders, both of Cleveland, O., are each reported to erect residence.

Fla., Auburndale.—Geo. F. Gale is reported to erect residence.

Fla., Auburndale.—P. J. Karnes is erecting 9-room residence.

Fla., Buena Vista.—Julius Smith will erect residence; concrete; 8 rooms; sleeping porches; asphalt shingles; cost \$6000.

Fla., Clearwater.—E. A. Marshall will erect residence.

Fla., Fort Meade.—W. P. Collins will erect frame residence.

Fla., Fort Myers.—F. A. Lane will erect one or more cottages.

Fla., Jacksonville.—F. A. Applegate will erect 2-story frame residence on Lydia St.; cost \$2500.

Fla., Jacksonville.—J. W. Hill will erect 2-story frame residence on College Ave.; cost \$5500.

Fla., Kissimmee.—D. W. Douglas will erect residence.

Fla., St. Petersburg.—I. A. Spencer will erect residence; 15 rooms and 2 baths; cost \$4000.

Fla., St. Augustine.—C. P. Jones will erect residence.

Fla., West Palm Beach.—L. Constantine will erect residence in Carlberg Ct.

Fla., West Palm Beach.—O. A. Jose, Indianapolis, Ind., is developing property lately purchased, building roads, granitoid sidewalks; erecting residence, and will erect several others; development work in charge of Charles P. Adams.

Fla., West Palm Beach.—A. M. Young will erect bungalow in Pinewood Ter.; plans to erect 2 other dwellings.

Fla., Zephyrhills.—Henry Baxter will erect residence.

Ga., Atlanta.—John Seiz will erect residence to cost \$4000; 1 story; frame; day labor.

Ga., Atlanta.—J. L. Dickey, Jr., is receiving bids to erect residence; 2 stories; frame; shingle or slate roof; steam heat; hardwood floors; tiled baths; Hentz & Reid, Archts., 932 Candler Bldg., Atlanta.

Ga., Atlanta.—J. H. Whitten will erect residence; 2 stories; brick veneer; tile roof; hardwood floors and trim; electric lights; porcelain plumbing; vapor heat; cost \$3000; Lella Ross Wilburn, Archt., Atlanta; day labor.

Ga., Atlanta.—M. L. Rauschenberg will erect three 1-story dwellings on Langhorne St. and Lucille Ave.; cost \$13,000; day labor.

Ga., Atlanta.—Mrs. M. J. Thomas will erect two one-story dwellings at 111-15 Drewry St.; cost \$4000.

Ga., Atlanta.—W. H. S. Hamilton will erect 1-story frame residence; furnace heat; electric wiring; day labor; Lella Ross Wilburn, Archt., Peters Bldg., Atlanta.

Ga., Atlanta.—M. L. Throver will erect residence; 2 stories; brick veneer or hollow tile; vapor heat; tile roof; tile, cement and hardwood floors; electric lights; cost \$10,000 to \$15,000; Lella Ross Wilburn, Archt., Peters Bldg., Atlanta.

Ga., Atlanta.—Mrs. M. J. Thomas will erect two one-story residences; cost \$4000; day labor.

Ga., Augusta.—W. A. Johnson will erect frame dwelling in 1700 block Starnes St.

Ga., Decatur.—Mrs. Harry Casey is having plans prepared by Henrietta C. Dozier, 932 Hurt Bldg., Atlanta, for bungalow.

Ga., Montezuma.—Calvin Harrison has plans by Lella Ross Wilburn, Peters Bldg., Atlanta, for residence; 1 story; frame; stone foundation; electric lights; cost \$3500.

Ga., Savannah.—Savage H. Lynah will erect several residences. (See Stores.)

Ky., Hopkinsville.—H. L. McPherson will rebuild residence; 8 rooms; plans not definite. (Lately reported burned.)

Ky., Louisville.—F. S. West will erect brick dwelling at 1440 Cherokee Rd.; cost \$7500.

Ky., Louisville.—W. P. Overstreet will erect brick dwelling at 23d and Oak Sts.; cost \$5000.

Ky., Louisville.—J. P. Cunningham will erect frame dwelling at 203 Western Boulevard; cost \$3200.

Ky., Louisville.—W. B. Morgan will erect frame dwelling at 1223 Cypress St.; cost \$2500.

Ky., Louisville.—Katie Loyal will erect frame dwelling at 308 Shawnee Drive; cost \$3000.

La., Lake Charles.—K. C. MacIver, Lafayette, La., will erect residence.

La., Lake Charles.—Frank Gunn will erect 2 residences on Iris St.; cost \$3000.

La., New Orleans.—J. Wischan has plans by S. P. Simon, New Orleans, for double cottage.

La., New Orleans.—Creed Walker has plans by Francis J. MacDonnell, New Orleans, for residence; hot-air heat.

La., New Orleans.—Chas. Ropolo will alter and erect addition to residence.

La., New Orleans.—G. A. Sylvain has plans by L. G. Link & Co., New Orleans, for frame residence.

La., New Orleans.—G. C. Gomez will erect residence; H. L. Pohey, Archt., New Orleans.

La., New Orleans.—Geo. J. Kahl will erect frame residence.

La., New Orleans.—Frank Sullivan has plans by A. G. Lake & Co., New Orleans, for frame residence.

La., New Orleans.—F. R. Hurlinghorst will erect double frame residence; 1 story.

La., New Orleans.—H. M. Wolbrecht will erect residence.

La., New Orleans.—J. L. Couturier has plans by H. J. Betzer, New Orleans, for alterations and addition to residence.

La., New Orleans.—J. E. Scott has plans by Sam P. Simone, New Orleans, for frame residence.

La., New Orleans.—J. Stewart has plans by Louis Ward, New Orleans, for frame residence.

La., New Orleans.—Mrs. Thos. Williamson will erect store and dwelling. (See Stores.)

La., New Orleans.—Mrs. F. L. Levy has plans by T. L. and A. J. Young, New Orleans, for residence.

La., New Orleans.—Paul Schertz has plans by P. F. Donnes, Jr., New Orleans, for frame and stucco residence.

La., New Orleans.—Wm. Drawl has plans by P. F. Donnes, Jr., New Orleans, for residence.

Md., Baltimore.—Dr. Harry Naylor, 3818 Roland Ave., will erect 5 two-story dwellings on Falls Rd., Hampden; 14x48 ft.; brick; Carey roofing; steam heat; gas and electric lighting; cement sidewalks; cost \$8000; F. E. Beall, Archt., 306 St. Paul St., Baltimore; owner receiving bids.

Md., Baltimore.—Annex Construction Co., 27th St., will erect 16 two-story dwellings; 13 ft. 9 in. by 44 ft.; brick; Carey roofing; hot-air heat; cost \$19,000; G. Bernard Leh-muller, Archt., 1735 N. Broadway, Baltimore.

Md., Baltimore.—F. E. Tobe, 2403 W. North Ave., will erect 8 two-story dwellings 14 ft. 3 in. by 52 ft. and one two-story dwelling 15 ft. 8½ in. by 52 ft.; brick; Carey roofing; steam heat; electric and gas light; cost \$14,000; plans and construction by owner. (Lately noted.)

Md., Baltimore.—Mrs. Mildred Hamburger, 1380 W. North Ave., has plans by R. B. Turner, 706 Union Trust Bldg., Baltimore, for dwelling; 30x30 ft.; ordinary construction; slate, asbestos or terra-cotta roof; hot-water heat; cost \$6000.

Md., Frederick.—D. Chester Kemp will erect residence on Hamburg Pike.

Md., Roland Park.—W. V. Coney has plans by Marsh & Gette, 43 Cedar St., New York, for residence; 2½ stories; frame; shingle roof and wall; 34x33 ft.; colonial design; hot-water heat; electric lights; cost \$3500; G. Walter Tovell, Eutaw & McCulloh Sts., Baltimore, is estimating.

Mo., Kansas City.—Junius B. Irving, Prest. of Irving-Pitt Mfg. Co., will erect residence in Sunset Hill.

Mo., St. Louis.—Henry Von Der Leith will erect five 5-room cottages on Gravois Ave.

Mo., St. Louis.—Isaac Rice will erect two-story dwelling at 4247 S. Grand St.; cost \$4200.

Mo., St. Louis.—H. H. Finck will erect two-story dwelling at 3518 Paris Ave.; cost \$3000; construction by owner.

Mo., St. Louis.—J. W. Evans will erect \$4000 bungalow on Union Ave.

Mo., St. Louis.—Milton H. Fink will erect residence; 7 rooms; hot-water heat; construction under supervision of Geo. J. Wansthrath.

N. C., Charlotte.—L. C. Cook is having plans prepared for residence on E. 7th St.

N. C., Hickory.—S. L. Whitner will remodel dwelling on 13th St.

N. C., Hickory.—J. R. Moretz will erect 3 dwellings; cost \$6000.

N. C., High Point.—C. L. Wheeler has plans by Lella Ross Wilburn, 306 Peters Bldg., Atlanta, for bungalow; 2 stories; frame; furnace heat; electric lights; cost \$4250.

N. C., Lenoir.—L. H. Tuttle will erect dwelling; cost \$2500.

N. C., Raleigh.—John U. Smith will erect 8-room frame residence; cost \$4500.

N. C., Rocky Mount.—J. W. Hines, Jr., will erect dwelling; cost \$3750; John C. Stout, Archt., Rocky Mount.

N. C., Rocky Mount.—Z. V. Jenkins will erect dwelling; cost \$5000; John C. Stout, Archt., Rocky Mount.

N. C., Winston-Salem.—T. B. Hairston will erect 3-room frame residence on 9th St.

N. C., Winston-Salem.—L. C. Bagby will erect 9-room residence on Davis St.

S. C., Greenville.—St. Albans School Trustees will erect residence for principal.

Tenn., Adams.—J. H. and M. L. Johnston are erecting residences near Adams; 2 stories; brick veneer; water-works; electric lights; completion by Dec. 15.

Tenn., Chattanooga.—S. T. Dewees will erect bungalow.

Tenn., Chattanooga.—S. C. Davis will erect residence on Signal Mountain; plans in progress.

Tenn., Nashville.—Mrs. Gertrude M. Leventhal will erect 3 dwellings; frame stucco; cost \$3000.

Tex., Brenham.—Mertin Bryan and Hugo Brandt will erect bungalow.

Tex., Burrow.—R. C. Wilson will erect residence; 2 stories; 6 rooms; will replace burned structure.

Tex., Cameron.—Dr. W. W. Greer is erecting 2-story residence; completion by Dec. 1.

Tex., Dallas.—Mrs. A. A. Rembert will erect 2-story 8-room brick-veneer dwelling at 3903 Lemmon St.; cost \$8000.

Tex., Dallas.—D. E. Johnson will rebuild residences; cost \$4000.

Tex., Dallas.—W. W. Graham will erect 5-room brick-veneer dwelling at 2921 Forest St.; cost \$4000.

Tex., Dallas.—F. J. Tholl will erect two-story 16-room frame residence at 1605 Corinth St.; cost \$5000.

Tex., Dallas.—W. C. Young, Jr., will erect 16-room frame residence at 4727 Reiger St.; cost \$6000.

Tex., Fort Worth.—John F. Ryan is having plans prepared for \$10,000 residence.

Tex., Houston.—Dr. B. F. Cook will erect residence on Boulevard; 2 stories; cost \$4000.

Tex., San Antonio.—S. T. Wright will erect 7-room dwelling; cost \$7000.

Tex., Houston.—Ben Riesner will remodel brick residence at 61 Youngs St.; cost \$9000.

Tex., Houston.—P. B. Scott will erect 8-room residence on Hathaway St.; cost \$3500.

Tex., Houston.—P. J. Daniels will erect 8-room residence on La Branch St.; cost \$3553.

Tex., Houston.—Carl Rucker will erect 2 cottages on Willard St.; cost \$3900.

Tex., San Antonio.—W. A. Springall will erect 8-room dwelling on Poplar St.; cost \$2500.

Tex., San Antonio.—Mrs. M. R. McCrory will erect four 4-room residences; cost \$3000.

Tex., Velasco.—J. M. Platt, Avant, Okla., is reported to erect residence.

Va., Norfolk.—I. Fivel will erect 2-story double brick residence; cost \$2400.

Va., Norfolk.—Joseph H. Culpeper will erect brick and frame residence on West-over Ave.; cost \$7050.

Va., Richmond.—Mrs. Sue S. Dawson will erect 2-story frame dwelling; cost \$2650.

Va., Richmond.—A. P. Grapponi will erect detached 2-story brick dwelling at 2925 W. Main St.; cost \$2500.

Va., Richmond.—E. J. Melton will erect two 2-story brick dwellings on Kemper St.; cost \$6400.

Va., Roanoke.—C. F. Cocke will erect 2-story frame dwelling at Mountain Ave. and Nelson St.; cost \$6000.

W. Va., Bluefield.—E. K. Bailey will erect \$2500 residence on Frederick St.

GOVERNMENT AND STATE

D. C., Washington.—War and Navy Building.—Treasury Dept., Oscar Wenderoth, Supervising Archt., Washington, it is reported,

will soon call for bids to repair building for State, War and Navy Bldg., including plumbing, improving about 85 restrooms, etc.; Frank Upman, Archt., Woodward Bldg., Washington. (Lately noted.)

D. C., Washington—Memorial—Arlington Memorial Amphitheater Com., Wm. W. Harts, executive and disbursing officer, 1729 New York Ave., approved plans and specifications for memorial amphitheater and chapel in Arlington Cemetery, and will probably receive bids until Dec. 1; specifications and invitations for proposals to be issued about Nov. 2; Carrere & Hastings, Archts., 225 5th Ave., New York. (Lately noted.)

D. C., Washington—Survey.—Supt. of Coast and Geodetic Survey, 205 New Jersey Ave. S. E., receives bids until Oct. 31 to construct 2 buildings for Coast and Geodetic Survey; 1 story, 20x70 ft., and 2 story, 25x50 ft. buildings; ordinary construction; tin roof; heating and lighting from present plant; electric elevator lift; F. G. Pierson, Washington Loan & Trust Bldg., Washington, Archt.; O. H. Tittman, Supt. of Survey; plans and specifications on application.

Fla., Pensacola—Postoffice—Treasury Department, Oscar Wenderoth, Supervising Archt., Washington, D. C., rejected all bids to improve postoffice, finish interior, install lighting system, marble wainscoting, etc. (Lately noted.)

Ga., Savannah—Postoffice—Marion Lucas, Custodian, opened bids to repair postoffice, including remodeling interior, improving portions of second floor, installation of mail and parcel post elevator, etc.; Algernon Blair, Montgomery, Ala., is lowest bidder at \$3846. (Lately noted.)

Ky., Jackson—Postoffice—Treasury Dept., Oscar Wenderoth, Supervising Archt., Washington, D. C., opened bids to erect postoffice and Federal Court building; cost about \$90,000; J. S. Rogers Co., Moorestown, N. J., is lowest bidder. (Previously noted.)

S. C., Columbia—Hospital—State will not vote on \$1,000,000 bonds for State hospital as lately reported; Cole L. Blease, Governor.

S. C., Columbia—Tuberculosis Hospital—State Board of Health receives bids at office of Wilson & Sompayrac, Archts., 1302 Main St., Columbia, until Nov. 10 to erect administration building and one ward of South Carolina Tuberculosis Hospital at State Park; plans and specifications on application to architects.

HOTELS

D. C., Washington.—Jacob Schwartz is having plans prepared by A. Goenner, 45 Bliss Bldg., Washington, to remodel building at 627-29 E St. N. W., for Commercial Hotel; six stories with basement; 55 rooms; fireproof; will practically rebuild structures except brownstone fronts, erect addition in rear, install elevator, etc.; cost \$20,000.

Ga., Savannah—Georgia Hotel Co., Harvey Granger, Prest., is reported to have approved plans by Falls City Construction Co., Louisville, Ky., for completion of hotel at cost of \$250,000 to \$275,000; completed structure to have 256 rooms. (Previously noted.)

La., Alexandria—Rapides Hotel will erect 3-story 22-room addition, also improve present structure; plans include tile floors, marble wainscoting, telephone system, etc.

Md., Baltimore.—Suburban Hotel, A. Powers, Prop., Park Heights and Wylie Aves., will erect addition to hotel; contractors estimating are Gladfelter & Chambers, 2074 Woodberry Ave.; John Waters, 23 E. Center St.; Edward Brady & Sons, 1113 Cathedral St.; Henry Smith & Sons Co., 7 E. German St., all of Baltimore, and Wm. L. Brooks, Pikesville, Md.

Mo., St. Louis.—Mrs. Daisy C. Cornwall and Maud S. Walker are reported having plans prepared by Preston J. Bradshaw, International Life Bldg., St. Louis, for hotel at Olive St. and Leonard Ave.; 6 stories; 200 rooms; stucco; fireproof; Italian style; leased to M. Corn and C. F. Levy.

N. C., Asheville.—C. E. Railing is reported to expend \$40,000 to \$50,000 for improvements to Battery Park hotel; will remodel, redecorate and furnish.

N. C., Louisville.—Franklin Hotel, G. W. Ford, owner, will rebuild hotel lately reported burned; loss \$25,000. (See Machinery Wanted.)

Okla., Albion.—Adam Alexander will erect hotel.

MISCELLANEOUS

Fla., Homestead—Lumber Yard.—Winn & Burden will erect building 60x100 ft. for lumber yard.

Fla., Orlando—Restroom.—Dr. C. D. Christ is reported to erect restroom for tourists; cost \$3000.

Fla., Miami—Hospital.—C. F. Sulzner will erect veterinary hospital, etc. (See Stores.)

Fla., West Tampa—Clubhouse.—Italian Club of West Tampa (Chas. J. Ackrill and others), 1703 Howard Ave., has plans by Fred J. James, Tampa, for clubhouse; 95x65 ft.; 2 stories; brick and terra-cotta facing; cost \$20,000. (Previously noted.)

Ga., Atlanta—Hospital.—Georgia Baptist Hospital is reported to have plans by Haralson Bleckley, Third National Bank Bldg., Atlanta, for hospital; cost \$500,000.

Ga., Savannah—Settlement-house.—Jewish Educational Alliance, A. Shulsafer, Secy. of Building Comm., delayed letting contract until Nov. 15 to erect building according to plans by H. W. Witcover, Savannah; 3 stories; red brick and stone exterior; cost \$50,000 to \$75,000. (Lately noted.)

Mo., Kansas City—Hospital.—Dr. A. B. Mulvaney will erect proposed East Side Hospital at 925-28 Newton Ave.; 2 stories; brick and concrete; cost \$10,000.

N. C., Greensboro—Hospital.—St. Leo's Hospital Trustees will erect 2-story brick addition on Summit Ave.; cost \$4500.

Tex., Beaumont—Home.—Negro Baptist State Assn., M. E. Robertson, Chrmn. of Trustees, plans to erect home for aged; cost about \$5000.

Tex., El Paso—Sanatorium.—Ralston Sanatorium Co. is having plans prepared for sanatorium to cost about \$50,000.

W. Va., Grafton.—Dr. R. H. Powell will erect hospital on Beech St.; ordinary construction; cost (without mechanical equipment) \$40,000; estimated cost of equipment \$10,000; architect not selected and details not determined; information furnished by R. B. Johnston, 420 W. Main St., Grafton.

Va., Newport News—Hospital.—Trustees General and Non-Sectarian Hospital, W. B. Livezey, Chrmn., receives bids until Nov. 2 (extended date) to erect building in accordance with plans and specifications at office of Donald McKee, Archt., Newport News. (Lately noted.)

Va., Roanoke—Auditorium, etc.—Roanoke Auditorium Co. will be organized with \$50,000 capital stock to erect auditorium, armory, convention hall, etc.; considering building 100x200 ft.; fireproof; 20,000 sq. ft. floor space; cost about \$40,000; Taylor Gleaves, Chrmn.; Jno. Wood, Secy. of Com.

W. Va., Wheeling—Convent.—Carmelite Sisters, Caroline and Biddle Sts., Baltimore, Md., will erect convent; 2 stories; brick and tile; frontage 160 ft.; 2 wings, each 130 ft. deep; will contain offices, etc.; chapel in center; F. F. Faris, Archt., Schmulbach Bldg., Wheeling, will complete plans Nov. 1, when bids will be asked. (Previously noted.)

RAILWAY STATIONS, SHEDS, ETC.

Fla., Miami—Miami Traction Co. is having plans prepared by Loraine (O.) Steel Mills for car barns.

Fla., St. Petersburg.—Tampa & Gulf Coast R. R., C. H. Lutz, Gen. Mgr., Odessa, Fla., will erect passenger station; cost \$20,000.

S. C., Spartanburg.—Plans of Southern Ry. Co., B. Herman, Chief Engr., Washington, D. C.; Carolina, Clinchfield & Ohio Ry., Ward Crosby, Chief Engr., Johnson City, Tenn., and Charleston & Western Carolina Ry., A. W. Anderson, Gen. Mgr., Augusta, Ga., for union station were accepted; plans embrace enlargement of present station; 4 main tracks and 2 stub tracks for local trains; 155-ft. underground passage to main tracks, with 2 stairways 750 ft. long and 1500 ft.; cost about \$40,000. (Previously noted.)

Tex., Dallas.—Texas & Pacific Ry. Co. is reported planning to erect office building. (See Bank and Office.)

SCHOOLS

Ala., Dothan.—Board of Education will repair high school reported burned at loss of \$30,000.

Ark., Grape.—School Board and Woodmen of the World will erect 2-story frame school and lodge building; K. N. McAllester, Secy. of School Board.

Fla., Tavares.—Board of Public Instruction of Lake County is considering election on \$15,000 bonds to erect school.

Ga., Donalsonville.—Donalsonville School Dist. Trustees, J. F. Brown, Secy.-Treas., receive bids and will let contract Nov. 18 to erect school; plans and specifications at office of P. E. Dennis, Archt., Macon, Ga.; will sell \$15,000 bonds. (Previously noted.)

Ky., Danville.—Kentucky College for Women is reported to erect \$80,000 dormitory in addition to recently completed structure.

Ky., Lexington.—Transylvania University is reported to expend \$10,000 to improve Morrison Chapel, including hardwood floors, electric lights, stucco exterior, etc.

Ky., Louisville.—St. Patrick's congregation is receiving bids through D. X. Murphy & Bros., Archts., Louisville, for foundation work on 2-story school; cost \$40,000.

La., New Orleans.—City votes Nov. 3 on constitutional amendment authorizing \$2,000,000 bonds to erect 10 schools and additions to other structures; Sol Wexler, Prest. Board of Directors of Public Schools. (Previously noted to vote Nov. 14.)

Md., Midland.—Allegany County Commrs. abandoned (for present) erection of school; Wm. F. Elder, Archt., Cumberland. (Lately noted.)

Miss., McHenry.—City will rebuild school reported burned; J. S. Adkison, Mayor.

Miss., Bude.—City is reported to have sold \$350,000 bonds for municipal building and schools. Address The Mayor.

S. C., Greenville.—St. Albans School Trustees will erect residence for principal.

Tenn., Ripley.—City plans to issue \$30,000 bonds to erect school. Address The Mayor.

Tex., Fort Worth.—City is reported to have voted \$180,000 bonds to erect high school. Address The Mayor.

Tex., Hot Wells.—Hot Wells Independent School Dist. will issue \$20,000 bonds for schools. Address Dist. School Trustees.

Tex., Kerrville.—Texas Synod of Presbyterian Church is reported to erect school; has \$100,000 and 140-acre site; Drs. F. E. Fincher, Wm. States Jacobs and Granville T. Storey, all of Houston, are interested.

Va., Alexandria.—City opened bids to erect high school; R. P. Whitty Co., Union Trust Bldg., Washington, D. C., is lowest bidder at \$41,892. (Lately noted.)

Va., Woodstock.—Messanutton Academy is erecting building.

W. Va., Huntington.—City has plans by Verus T. Ritter, Huntington, for high school; fireproof; steel girders and trusses encased in concrete; granite base; brick and terra-cotta trim; 3 stories above ground floor; site 245x140 ft.; monumental staircases and granite steps; auditorium to seat 1400; steam and air mechanical system; manual training, domestic science and gymnasium equipment; showers; cost \$300,000. (Previously noted.)

W. Va., Marmet.—Loudon Dist. votes Nov. 3 on tax to erect school at Marmet, etc. (See W. Va., South Charleston.)

W. Va., South Charleston.—Loudon Dist. votes Nov. 3 on tax to erect schools at Marmet, Fern Bank, near mouth of Cane Fork on Davis Creek, and complete school under construction at South Charleston; R. J. McCormack, Secy., Board of Education. (Previously noted.)

STORES

Ala., Bessemer.—James Sullivan will erect 2-story business building on 3d Ave.

Ala., Bessemer.—J. W. Ager will erect business building on 3d Ave.; concrete construction.

Ark., Heber Springs.—W. J. Short will rebuild structure reported burned at loss of \$6000.

Ark., Hot Springs.—B. C. Truman, 437 Whittington Ave., has plans by W. T. Bailey, Memphis, Tenn., for business building; 2 stories; brick and stone; cost \$7000.

Ark., Winslow.—Cole-Land Mercantile Co. will erect business building.

D. C., Washington.—Rudolph B. Behrend, 412 Columbian Bldg., will erect mercantile building on 8th St. between G and H Sts. N. W.

Fla., Miami.—C. F. Sulzner will erect 2 buildings on Ave. F; one for tin shop of M. J. Bohnert, other for veterinary hospital; concrete blocks and sheet iron; former 24x75 ft., latter 24x30 ft.

Ga., Albany.—Geo. Kahn will improve store building occupied by A. S. Cohen; provide plate-glass front, etc.

Ga., Atlanta.—Hugh Richardson abandoned plans to erect store. (Previously noted.)

Ga., Savannah.—Savage H. Lynah will convert structures on Augusta Rd. and A and B Sts. into stores; also erect several dwellings.

Ga., Stillmore.—W. J. Evans will erect 2 brick stores to replace structures lately noted burned at loss of \$6000.

Ky., Louisville.—J. M. Asherton will expend \$15,000 to remodel store at 462 S. 4th St.

La., Lake Charles.—Dr. R. G. Holcomb is reported to erect building on Clement Pl.

La., Lake Charles.—K. C. MacIver, Lafay-ette, La., will erect building on Wiens St.; will also erect residence.

La., New Orleans.—Mrs. Thos. Williamson will erect 2-story residence and business building at Berlin and Liberty Sts.

La., New Orleans.—Stachle Realty Co. has plans by O. P. Mohr, New Orleans, for 1-story frame and brick business building.

Mo., Macon.—J. D. Smith & Son have plans by Abt Ludwig, Moberly, Mo., to rebuild store and office building; 24x120 ft.; semi-fireproof; brick front; composition asbestos roof; freight elevator; cost \$9000; bids Oct. 29. (Previously noted burned.)

Mo., St. Louis.—C. Degehard will erect 2-story brick building at 5501 Idaho St.; cost \$3000; construction by owner.

Mo., St. Louis.—Jos. Mogler will erect store and flat on Jefferson Ave.

Mo., St. Louis.—J. D. Rouse will erect 2-story brick building at 5748 DeGlerville St.; cost \$3500; construction by owner.

Mo., St. Louis.—Trustees of Missouri Botanical (Shaw's) Garden are reported to erect building at 15th and Locust Sts.

N. C., Hollis.—J. P. D. Withrow is erecting store building; rock construction; 64x54 ft.; cement floor; metal roof.

N. C., Winston-Salem.—J. S. Grogan estate will, it is reported, erect building on 4th St.

N. C., Winston-Salem.—Dr. J. S. State will erect business building on N. Liberty St.

Okla., Muskogee.—Adleta Paper Co. will erect business building.

Okla., Clinton.—J. P. White will erect business building; 2 stories; brick.

Okla., Sapulpa.—J. E. Stroup will erect 2-story brick business building; plans in progress.

Okla., Prague.—Svoboda Bros. will erect business building; 50x50 ft.

S. C., Columbia.—Jas. L. Tapp will erect department store to be occupied by Jas. L. Tapp Co.; 69x212 ft.; 4 stories; plans considered after Feb. 1. (Lately noted.)

Tenn., Lebanon.—A. A. Adams will erect 3 business buildings; 20x30 ft.; lower floor for salesrooms, etc.; upper floors for offices; also contemplates erecting warehouse.

Tex., Houston.—National Liquor Co. will remodel building at Milam and Preston Sts.; cost \$5047.

Tex., Lometa.—J. N. Mason will erect 2-story brick business building; 40x100 ft. with "L" 40x25 ft.; tar and gravel roof; stoves; electric lighting; hand-power elevator; Robt. Bristow, Archt., Temple, Tex.

Tex., Marfa.—Marfa Drug Co. has plans by E. Krause, Room 19 Morgan Bldg., El Paso, for business building; 2 stories and basement; 31x30 ft.; date for letting contract not set; cost \$12,000.

Tex., San Saba.—J. D. Estep is reported to erect 2-story stone business building.

Tex., Santo.—C. S. Maddux has plans by W. P. Edmonson, Santo, for rebuilding store; 60x30 ft.; mill construction; steel roof. (Lately reported burned.)

Tex., Santo.—T. M. Johnston has plans by W. P. S. Edmonson, Santo, for rebuilding store. (Lately reported burned.)

Va., Norfolk.—B. Randolph Hicks has plans by Mitchell & Wilcox, Norfolk, for alterations to building at Brewer and Charlotte Sts. for stores and apartments; 3 stores on lower floor; apartments above; bids opened Oct. 28.

W. Va., Morgantown.—Columbus Long & Lucas Engineering Co. is reported to have plans for 4-story brick store and office building for E. M. Everly, Court Square; cost about \$45,000.

THEATERS

Md., Baltimore.—I. Berman is having plans prepared by John Freund, Jr., Hoffman Bldg., Baltimore, for theater at 1-5 H. St. and 913 E. Baltimore St.; brick and concrete.

N. C., Wilmington.—Howard & Wells, Props. of Bijou Theater, are having plans prepared by Burrett H. Stephens, Wilmington, for theater on Front St.; fireproof; brick; ornamental front; cost about \$20,000.

Va., Newport News.—W. W. Scott is having plans prepared by C. T. Holtzclaw, Hampton, Va., for moving-picture theater.

WAREHOUSES

Ala., Courtland.—Courtland Bonded Warehouse Co. incptd. with \$20,000 capital stock.

Ark., Foreman.—Farmers & Merchants' Warehouse Co. organized with \$3500 capital stock; L. J. Atkinson, Prest.; W. T. Reid, V.-P.; O. L. Davis, Secy.; S. Schuman, Treas.; will erect warehouse.

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Ga., Quitman.—K. H. Williams is erecting warehouse and office building to be occupied by Wade-Chambers Co.; 60x160 ft.; brick.

Md., Cumberland.—Builders' Supply Co. will erect 3-story brick and reinforced concrete warehouse; cost \$20,000.

Mo., St. Louis.—Jacob Rubin will erect 2-story warehouse at 4011-13 Lafayette St.; cost \$2000; construction by owner.

N. C., Aberdeen.—Aberdeen Tobacco Warehouse Co. Incptd. with \$25,000 capital stock by A. R. Bennett, Winston-Salem, N. C.; J. B. Page and John Blue, Aberdeen.

N. C., Lilesville.—Lilesville Storage Warehouse Co. Incptd. with \$5000 capital stock by R. L. Lindsay, E. T. Knott and others; erect 30x100-ft. cotton warehouse; fireproof; composition roof; cost \$1090.

N. C., Morven.—People's Bonded Warehouse Co. Incptd. with \$5000 capital stock by T. V. Harrison, G. A. Martin and others.

N. C., Wilmington.—Wilmington Dock & Storage Co. Incptd. with \$4000 capital stock by P. D. Williams, W. E. Watson and W. T. Woodruff.

N. C., Winston-Salem.—H. J. Reynolds Tobacco Co. will erect warehouse; company wires Manufacturers Record: "Warehouse will be about 200x300 ft.; 1 story; steel construction; galvanized-iron roof; designed and built by own force."

Okla., Blanchard.—Blanchard Mutual Warehouse Co. Incptd. with \$2000 capital stock by C. N. Russell, F. H. Wilson and H. C. Freeman.

Okla., Checotah.—Checotah Warehouse Assn. Incptd. with \$5000 capital stock by B. F. Lafayette, A. O. Johnson and W. M. Staley.

S. C., Batesburg.—Tri-County Warehouse Co. organized with \$5000 capital stock by A. C. Jones, C. E. Jones and E. V. Culum, Jr.

S. C., Dillon.—Maple Hurst Storage Co. Incptd. with J. H. David, Prest.; J. H. David, Jr., Secy.-Treas.

S. C., Fort Motte.—Fort Motte Warehouse Co. Incptd. by Robt. Adams, T. T. Lane, A. G. Avant and H. H. Cauthen.

S. C., Lamar.—Lamar Warehouse & Storage Co. Incptd. with \$5000 capital stock by J. Murr, M. J. McInnis, A. J. A. Perritt and others.

S. C., Rembert.—Rembert Warehouse Co. Incptd. by Ed H. Rembert, D. V. Keels and J. L. Gillis.

S. C., Ruby.—Ruby Warehouse Co. Incptd. by A. P. Smith, D. H. McGregor, Smith Ollon and J. S. McGregor.

S. C., Sardinia, R. F. D. from Mayesville. Sardinia Storage Co. Incptd. by R. E. McFaddin and D. R. DuBose.

S. C., Wedgefield.—Company organized with Dr. M. L. Parler, Prest.; Sam Weinberg, V.-P.; John B. Ryan, Secy.-Treas.; will erect cotton warehouse.

S. C., Williston.—Williston Cotton Warehouse Co. Incptd. with \$5000 capital stock. J. A. Kennedy, Prest.; A. M. Kennedy, V.-P.; J. E. Kennedy, Secy.-Treas.

Tenn., Lebanon.—A. A. Adams contemplates erecting warehouse. (See Stores.)

Tex., Austin.—John Andrewartha, consulting engineer and architect, Austin, completed plans for cotton warehouse; 138x128 ft.; capacity 5000 bales; steel, reinforced concrete or sheet metal; metal cornices; wireglass sidelights.

Tex., Barry.—Citizens' Warehouse & Storage Co. Incptd. with \$4000 capital stock by P. D. Williams, W. E. Watson and W. T. Woodruff.

Tex., Embouse.—Farmers & Merchants' Cotton Warehouse Co. Incptd. with \$4000 capital stock by M. Montgomery, A. Hanks and J. R. Collins.

Tex., Houston.—City deferred date of opening bid for warehouse from Oct. 26 to Oct. 30. (See City and County.)

Tex., Kenedy.—Farmers & Merchants' Cotton Warehouse Co. organized with E. P. Ruhmann, Prest.; will erect warehouse; J. L. Bain, Mgr.

Tex., LaCoste.—Farmers' Union Warehouse Co. Incptd. with \$5000 capital stock by Henry Haas, H. F. Wurzbach and Jack Stein.

Tex., Leonard.—Leonard Bonded Warehouse Co. Incptd. with \$3000 capital stock by Levi Young, D. G. Sudderth and B. B. Braly.

Tex., Luling.—Luling Oil Mill will erect ironclad building to replace hullhouse lately noted burned.

Tex., Taylor.—Taylor Bonded Warehouse Co., T. W. Marse, Prest., has plans by Henry Struve, Taylor, for cotton warehouse; corrugated iron on concrete foundation; concrete flooring; brick partition walls; 100x400 ft.; capacity 2500 bales. (Lately noted.)

Va., Norfolk.—Security Warehouse Corp. chartered with \$50,000 capital stock; C. F. Burroughs, Prest.; J. W. Beard, Secy.-Treas.

La., New Orleans.—Geo. J. Glover, New Orleans, general contractor to erect St. Rose De Lima Church building, let following subcontracts: Wall plugs, F. Codman Ford, 728 Union St.; gravel and cement, F. Jahnecke, Inc., 814 Howard Ave.; sand, J. J. Clark Co., 1111 Julia St.; piles, brick and lumber, Salmen Brick & Lumber Co., 912 Whitney Bldg.; slating, Jordy Bros. Slate Co., 834 Julia St.; steel bars, Ole K. Olsen, 821 Perdido St.; hardware, A. Baldwin & Co., Camp and Common Sts.; lightning rods, W. B. Cooter Interstate Electric Co.; tile work, J. Catrano, 523 S. Solomon St.; plumbing, J. V. Steffeler, 836 Baronne St.; structural steel, Bodell Structural Steel Works, 3617 D'Hemecourt St.; glazing, National Glass Co., 336 Union St.; sheet metal work, R. G. Holzer Sheet Metal Works, 317 Burgundy St.; painting, J. C. Maurer, 835 Perdido St.; inscription stone, Webben Marble & Granite Co., 501 City Park Ave.—all of New Orleans; mill work, Algiers Mfg. Co., Algiers, La.; fenestra sash, Trussed Concrete Steel Co., Youngstown, O.; Paul Andry, Archt., 510 Tulane Newcomb Bldg., New Orleans. (Previously noted.)

N. C., High Point.—West End Baptist Church, Rev. F. L. Fiddler, pastor, has plans by and let contract to Arthur Brown, High Point, to erect building; 48x59 ft.; ordinary construction; galvanized shingle roof; hot-air furnace; electric lighting; cost \$4000. (Lately noted.)

Tenn., Memphis.—M. E. Church let contract to E. B. Scott, 1176 Forest Ave., Memphis, to erect building; 60x90 ft.; ordinary construction; fireproof roof; steam heat; electric lighting; cost, complete, \$18,000; Jno. Gaisford, Archt., Memphis. (Lately noted.)

Tex., Fort Worth.—G. S. Smith, Fort Worth, has contract to erect tabernacle; waterproof; double deck; about 60 windows; frame; 3 entrances; cost about \$4500.

W. Va., Charleston.—St. Paul Evangelical Lutheran Church let contract to A. T. Hazen, Charleston, to erect building; stone; cost \$40,000; Weber, Werner & Adkins, architects, Cincinnati, O. (Lately noted.)

CITY AND COUNTY

Fla., Clearwater.—Jail.—Pinellas County Commrs. let contract at \$19,865 to Bartow Construction Co., Bartow, Fla., to erect jail; Willis R. Biggers, Archt., Tampa. (Lately noted.)

Fla., Panama City.—Jail and Courthouse.—Ray County Commrs. let contract to erect courthouse and jail. (See Courthouse.)

Fla., Tampa.—City Hall.—McGucken & Hyer, Consumers' Ice Co. Bldg., Tampa, general contractors to erect city hall, let following subcontracts: Plumbing, Borssum Plumbing Co.; painting, J. F. Cortina; roofing and sheet metal, Eagle Roofing & Metal Co.—all of Tampa; heating, Clow & Son; cement, Lehigh Portland Cement Co., Savannah; brick, Hay-Walker Brick Co., Pittsburgh; steel and cast iron, Chattanooga (Tenn.) Roofing & Foundry Co.; cell work, Stewart Iron Works, Cincinnati; mill work, Roach & Musser, Muscatine, Ia.; finished hardware, Russell Irwin, Bridgeport, Conn.; clock, Seth Thomas Clock Co., New York; vaults and linings, Franz Safe & Lock Co., Jacksonville, Fla.; finished floors, Kella-Stone Co., Chicago; partitions, U. S. Gypsum Co., Chicago; reinforcing steel, Atlanta Stone Co.; granite, Capital Stone Co.; terra-cotta, Atlanta Terra Cotta Co.—all of Atlanta; hollow tile, Bessemer Fire Brick Co., Birmingham; wiring, Florida Electrical Machine Co., Lakeland, Fla.; marble, Vermont Marble Co., Philadelphia; elevator, Warner Elevator Co., Cincinnati; Bonfoey & Elliott, Archts., Tampa. (Previously noted to cost \$207,000.)

Md., Baltimore.—Collector's Office.—Board of Awards let contract at \$5342 to C. Herbold & Son, 2768 W. North Ave., Baltimore, to alter collector's and cashier's offices, including marble counter, 4 cages, book racks, electric fixtures, etc.; C. E. Stubbs, Inspector of Buildings. (Lately noted.)

Miss., Meridian.—City Hall.—City is reported to have let contracts as follows for City Hall: Heating, Fischer Heating Co., at \$3438; plumbing, Meridian Plumbing Co., at \$3925; wiring, Dalton Electric Co., at \$1576; P. J. Krouse, Archt., Meridian. (General contract lately noted let to Hancock & McArthur, Meridian.)

Mo., Carthage.—Alms-house.—Jasper County Commrs. will expend \$75,000 (cost without mechanical equipment) to erect alms-house; 90x112 ft.; fireproof; asbestos shingle roof; hot-water heat to cost \$8000; electric lighting, \$2300; A. C. Michels, Archt., Joplin, Mo.; contract (lately noted) let to P. J. McNeerney, Carthage.

Tenn., Columbia.—Sheriff's Residence.—Maury County Commrs. let contract at \$8639.15 to Dugger & Tickle, Mt. Pleasant, Tenn., to erect sheriff's residence; brick. (Lately noted.)

Tex., El Paso.—Jail.—City let contract at \$3322.38 to McKee Contracting Co., El Paso, to improve jail, and at \$374 to Elliott Engineering Co., El Paso, for heating plant; plans include plumbing system, cells, painting, electrical fixtures and general repairs. (Lately noted.)

Tex., San Antonio.—Fire and Police Station. City let contract to Wright & Sanders, Alamo National Bank Bldg., San Antonio, to erect central fire and police stations; 3 stories; 72x100 ft.; reinforced concrete; fireproof; gravel roof; steam heat; electric lighting; cost (not including plumbing, heating, wiring, elevator or jail work) \$62,811; electric conduit; 2 elevators; Emmett T. Jackson, Archt., San Antonio. (Lately noted.)

COURTHOUSES

Fla., Fort Myers.—Lee County Commrs. let contract at \$100,000 to F. P. Heifner, Atlanta, Ga., to erect courthouse; F. J. Kennard, Archt., Tampa. (Lately noted.)

Fla., Panama City.—Bay County Commrs. let contract at \$80,000 to F. M. Dobson & Co., Montgomery, Ala., to erect courthouse and jail; 83x170 ft.; tile roof; S. J. Welch, Archt., Pensacola, Fla. (Lately noted.)

Mo., Richmond.—L. W. Dumas, Jr., Construction Co., 414 Guitard Bldg., Columbia, Mo., general contractor to erect courthouse for Ray county, let following subcontracts: Mill Work, Farley Loetscher Mfg. Co., Dubuque, Iowa; painting, Chas. Maxwell, Kahoka, Mo.; electrical work, American Electric Co., St. Joseph, Mo.; ornamental and miscellaneous iron work, S. W. Wire & Iron Co.; reinforcing steel, J. P. Sprague Co.; tile, American & Venetian Marble Co.; metal windows, Henry Wels Cornice Co., all of Kansas City, Mo.; structural steel, Illinois Steel Bridge Co., Jacksonville, Ill.; cut stone, Consolidated Stone Co., Bedford, Ind.; plumbing and heating, Liberty (Mo.) Plumbing & Heating Co.; brick work, J. J. Hoffman, Milan, Mo.; Warren R. Roberts, Archt., Chillicothe, Mo. (Previously noted.)

Tenn., Erwin.—Union County Commrs. let contract to W. H. Bostwick to erect courthouse to replace present structure; J. W. Shepard, Archt., Knoxville. (Lately noted.)

Tex., San Antonio.—H. N. Jones Construction Co., Moore Bldg., San Antonio, general contractor to erect courthouse for Bexar county, let following subcontracts: Brick, Moody & Hornum; reinforcing steel and forestry, Trussed Concrete Steel Co. of Texas; structural steel and miscellaneous, Alamo Iron Works; lumber, Hillyer-Deutsch-Jarratt Co.; cement, San Antonio Portland Cement Co.; sand, San Antonio Sand Co.; all of San Antonio; stone, Comal Rock Co., New Braunfels, Tex.; sandstone, quarried by H. N. Jones Construction Co., Barstow, Tex.; Leo M. Diehlmann and C. T. Boelhaue, Asso. Archts., San Antonio. (Lately noted.)

DWELLINGS

Ala., Birmingham.—W. B. Douglas let contract to Miller Bros., Birmingham, to erect dwelling; 2 stories; frame and brick veneer; composition shingle roof; furnace; cost \$8000; Miller & Martin, Archts., Birmingham. (Lately noted.)

Ala., Birmingham.—Jerome Sterne will expend \$6000 to erect dwelling; 8 rooms; 2 stories; brick veneer; ordinary construction; electric lighting; hot-air heat; Miller & Martin, Archts., Birmingham; contract (lately noted) let to A. C. Burns, 7506 First Ave., Birmingham.

Ark., Harrisburg.—J. D. Bradsher has plans by W. D. Holtzman, Southern Trust Bldg., Little Rock, for residence; 2 stories; brick veneer; cost about \$10,000; contract reported let.

Ala., Mobile.—John D. Logan has plans by and let contract to Robt. Windham, Mobile, to erect dwelling; 14 rooms and baths; ordinary construction; slate roof; cost \$4000. (Lately noted.)

D. C., Washington.—Heber L. Thornton let contract to B. R. Hardesty to erect dwellings at 7217 and 7225 Blair Rd. N. W.; cost \$6500; E. N. Hamilton, Archt., 944 K St. N. W., Washington.

D. C., Washington.—Moreland Bros. let contract to Upton-Skoot Construction Co., Washington Land & Title Bldg., Washington, to erect 3 dwellings at 15th and Harvard Sts. N. W.; cost \$9000; Donn & Deming, Archts., 608 17th St. N. W., Washington.

Fla., DeLeon Springs.—Geo. Lefevre let contract to C. H. Van Ormer, Augusta, Ga.,

BUILDING CONTRACTS AWARDED

APARTMENT-HOUSES

Fla., Tampa.—Clayton E. Deane let contract to Clayton & Deane, Tampa, to erect 2-story flat; cost \$3000.

Mo., St. Louis.—Katherine Jenkins let contract to J. Quillen, St. Louis, to erect 2-story tenement-house at 3860 Evans St.; cost \$4500.

Mo., St. Louis.—J. Cleary let contract to I. Widener, St. Louis, to erect 2-story tenement-house at 3728 Bamberger St.; cost \$4000.

Mo., St. Louis.—A. B. Morris let contract to erect store and apartment-house. (See Stores.)

Mo., St. Louis.—Daisy Kenefick let contract to Bonded Building Co. to erect tenement-house at 4028-30 Lafayette St.; cost \$6000.

Mo., St. Louis.—Wm. Koch let contract to J. Voepel to erect 2-story tenement-house at 4522 Gibson Ave.; cost \$4500.

Tex., Abilene.—W. P. Pulley let contract to J. B. Fagan, Abilene, to rebuild apartment-house; 50x84 ft.; ordinary construction; shingle roof; natural-gas heat; electric lighting; cost \$9000. (Lately reported burned.)

Tex., Dallas.—S. H. Ashner will erect addition to building at 1408 Pocahontas St.; 2 stories; ordinary construction; cypress shingle roof; cost \$5000; contract let to R. D. James, Dallas.

Va., Portsmouth.—Rev. H. W. Dowling, pastor of First Congregational Church, let contract to J. A. Duvall, Portsmouth, to erect apartment-house at Hatton and B Sts.; 3 stories; cost \$3900.

ASSOCIATION AND FRATERNAL

Md., Baltimore.—Charles L. Stockhausen Co., Inc., Marine National Bank Bldg., Baltimore, general contractor to erect B. P. O. E. building, let following subcontracts: Heating and ventilating, Walter E. Hill & Co., 203 N. Liberty St.; plumbing and gas-fitting, Allen W. Beam, 649 N. Fulton Ave.;

electric wiring and fixtures, National Electric Co., 613 E. Lombard St.; vacuum cleaning system, Tuee Co., 15 E. Fayette St.; marble work, Evans Marble Co., 204 E. York St.; painting, George J. Roche & Son, Lexington and Holliday Sts.; mill work, Jos. Thomas & Sons, 1125 Lendenhall St.; lumber, N. W. James Lumber Co., 921 Allicanna St.; bowling alleys, etc., Brunswick-Balke-Collender Co., 11 N. Liberty St.; common brick, Baltimore Brick Co., 710 Maryland Trust Bldg.; roofing, Wm. F. Zeller & Co., 1119 Denver St.; structural steel, Chesapeake Iron Works, Bush and Severn Sts.; face brick, Hydraulic Press Brick Co., 305 Title Bldg., all of Baltimore; fireproofing, National Fireproofing Co., Washington, D. C.; limestone, J. Hoadley & Sons, Stinesville, Ind.; ornamental iron work, Stoller & Cook, Trinity Ave.; dampproofing, Impervious Products Co., both of New York; structure 59.4x155.9 ft.; cost about \$200,000; Wyatt & Nolting, Archts., Keyser Bldg., Baltimore. (Previously noted.)

Tenn., Nashville.—Cumberland Lodge, No. 8. A. F. and A. M., let all contracts to erect Masonic Temple; 76x172 ft.; 3½ stories; cut stone and brick; metal roof; cost \$100,000 heating plant \$1500; electric lighting \$4000; Asmus & Norton, Archts., Nashville. (Previously noted.)

CHURCHES

Ark., Hot Springs.—Orange Street Presbyterian Church, Rev. F. M. Wylie, pastor, is having plans prepared by H. F. Terrell, Hot Springs, for building; 44x80 ft.; brick; vulcanite shingle roof; natural gas heaters; cost \$7500; Worthington & Barber, Contra., Hot Springs.

Ga., Atlanta.—First Presbyterian Church let contract to Miles & Bradt, Atlanta, to erect Sunday-school building; 2 stories; brick; cost about \$18,000; W. T. Downing, Archt., Atlanta.

Ga., Lafayette.—Christian Church let contract to C. P. Pickard, Lafayette, to erect building.

to erect 2-story frame bungalow; install pneumatic water-supply system and acetylene-gas lighting; cost \$4000.

Fla., Tampa.—Jack Lawes let contract to J. S. Sweet, Tampa, to erect bungalow at Gunby and Dekle Ave.; cost \$2500.

Fla., West Palm Beach.—Edw. Owens let contract to erect bungalow in Cariberg Court.

Fla., West Palm Beach.—Mrs. F. E. Holley let contract to Jacob Gentry, West Palm Beach, to erect residence; 2 stories; 6 rooms.

Fla., West Palm Beach.—M. D. Carmichael let contract to A. Nelson, West Palm Beach, to remodel residence.

Ga., Columbus.—Walter Culpepper, Tallahassee, Ga., has contract to rebuild 2 residences in East Highlands recently burned.

La., New Orleans.—Annie Moree let contract to Albert G. Baer, New Orleans, to erect 2-story double frame residence; slate roof; cost \$4800.

La., New Orleans.—Sixth District Building and Loan Assn. let contract to Paul W. Seebold, New Orleans, for 2 double frame dwellings; cost \$4200.

Md., Baltimore.—Bernard F. Doll, 330 Augusta Ave., has plans by and let contract to John Neldhardt, 119 Harford Rd., Baltimore, to erect dwelling; 2 stories; frame; 26x30 ft.; slate roof; hot-water heat; gas and electric lights; cost \$3000.

Md., Chevy Chase.—B. H. Warner let contract to A. C. Warthen, Kensington, Md., to improve residence at cost of \$7000; will erect library 18x28 ft., etc.; A. P. Clark, Jr., Archt., 816 14th St. N. W., Washington.

Md., Knoxville.—J. H. M. Claggett let contract to alter and erect addition to residence; cost about \$3000; Laurence H. Fowler, Archt., 347 N. Charles St., Baltimore, Md.

Md., Salisbury.—Travers L. Ruark has plans by and let contract to W. E. Booth, Salisbury, to erect dwelling; 41x61 ft.; frame; slate roof; hot-water heat. (Lately noted.)

Mo., St. Louis.—A. Deidesheimer let contract to Armbruster & Co., St. Louis, to erect 2-story dwelling at 4022 Magnolia St.; cost \$6100.

Mo., St. Louis.—B. Kaner let contract to A. Tombridge, St. Louis, to erect 2-story dwelling at 325 Klock St.; cost \$4900.

Mo., St. Louis.—G. Meyersick let contract to alter store and dwelling. (See Stores.)

N. C., Charlotte.—D. H. McCollough, 14 E. 14th St., let contract to Vaughn Construction Co., Charlotte, to erect dwelling; 29x58 ft.; shingle roof; hot-air heat; electric lighting; cost \$3500; Osborne & Pritchett, Archts. (Lately noted.)

N. C., Winston-Salem.—F. L. Goble let contract to J. H. Grubbs, Winston-Salem, to erect dwelling on 3d St.

N. C., Winston-Salem.—Mrs. R. J. Reynolds will erect residence at Reynolda; 2 stories and basement; roof garden; Mrs. Reynolds wires Manufacturers Record: "Main building 60x100 ft.; 2 wings, 25x50 ft.; fireproof construction; cost unknown; Charles Barton Keen, Archt., 1218 Chestnut St., Philadelphia, Pa.; N. Langley, Salaried Contr., Winston-Salem."

S. C., Charleston.—Sires & Westendorff let contract to erect dwelling and store. (See Stores.)

Tenn., Mt. Pleasant.—Maury county let contract to Dugger & Tickle, Mt. Pleasant, Tenn., to erect residence for Sheriff; 10 rooms; cost \$5639.50; J. F. McKnight, County Judge. (Lately noted.)

Tex., Brenham.—Wm. Kneschke let contract to erect 7-room residence near Rocky Hill.

Tex., Brenham.—Mrs. Helen Grebe let contract to erect bungalow.

Tex., Freeport.—H. C. Dorton let contract to Jas. Paterson to erect 4-room bungalow.

Tex., Lampasas.—J. P. Dillingham let contract to erect bungalow on Western Ave.

Tex., Texas City.—R. B. Smith is reported to have let contract to erect residence.

Tex., Texas City.—T. E. Gammage of Harlow Gammage Co. is reported to have let contract to erect residence.

Va., Hampton.—Frank Herbert let contract for brick work on residence to G. W. Whitely, Newport News, Va.; cost \$5500; C. T. Holtzclaw, Archt., Hampton.

GOVERNMENT AND STATE

Ky., Georgetown.—Postoffice.—Treasury Dept., Oscar Wenderoth, Supvr. Archt., Washington, D. C., let contract at \$61,812 to

George Becking, Chattanooga, to erect post-office; limestone construction; 2 stories and basement; 4800 sq. ft. ground area; stone facing; composition roofing. (Previously noted.)

Md., Baltimore.—Postoffice.—Treasury Dept., Oscar Wenderoth, Supvr. Archt., Washington, D. C., let contract to Singer-Pentz Co., 600 Equitable Bldg., for improvements to postoffice, including reconstructing interior of stamp division and improvements to windows; install marble counters, glass and metal grill work, etc. (Lately noted.)

Tex., Houston.—Pavilion.—State let contract to N. C. Jensen, Houston, to erect pavilion on San Jacinto battlefield; 20x90 ft.; fireproof; Spanish tile roof; cost \$3000; C. H. Page & Bro., Archts., Austin. (Lately noted under Miscellaneous.)

HOTELS

Ala., Huntsville.—Percy C. Brumley, Huntsville, has contract to rebuild Tulane Hotel lately noted burned; stucco front; brick wall.

D. C., Washington.—P. F. Gormley Co., Union Trust Bldg., Washington, general contractor to erect Capitol Park Hotel, let following subcontracts: American Mosaic Co., 912 1 St. N. W., marble; Barber & Ross, 11th and G St., structural steel; Jno. J. Earley, 2131 G St. N. W., plastering; Hammett Fireproofing Co., Colorado Bldg., fireproofing; E. G. Gummell, 366 Rhode Island Ave., excavating and concrete work; Jas. B. Lambie Co., 1415 New York Ave. N. W., finishing hardware; Jos. Robson, 3526 T St. N. W., setting stone; Rudolph & West Co., 1332 New York Ave. N. W., hardware; C. A. Schneider's Sons, 212 12th St. N. W., ornamental iron; A. B. Seb Electric Co., Real Estate Trust Bldg., elevators; Standard Engineering Co., Woodward Bldg., heating and plumbing; Velmeyer & Laphis, Ohio Ave., stone; Wheat & Cassidy, Inc., 707 12th St. N. W., papering; Wolfsteiner Co., 1315 W St. N. W., sheet metal work—all of Washington; Atchison Revolving Door Co., Independence, Kan., revolving door; Jno. A. Rowe Cut Stone Co., Bedford, Ind., limestone; Jno. Swenson Granite Co., Concord, N. H., granite; Chautaugua Planing Mill Co., mill work; Howell, Field & Goddard, Long Island City, N. Y., kalamined doors; Robt. E. Mackay Co., painting; S. H. Pomeroy, metal windows; Hugh Reilly Co., 1334 New York Ave., Washington, glazing; Cutler Mail Chute Co., Rochester, N. Y., mail chute; A. R. Mullett & Co., Union Trust Bldg., Washington, Archt. (Previously noted to cost \$150,000.)

Tex., Palestine.—Hart & Gaught, Palestine, general contractors to erect hotel, let following subcontracts: A. M. Burns, heating; Twin Bros. Plumbing Co., San Antonio, plumbing and electrical wiring; Farrar-Hurt Lumber Co., Fort Worth, mill work; Allen & Wood, Palestine, granitoid floors, sidewalks and plastering; Steele & Co., Fort Worth, tile and marble work; Phelps & Brooks, Archts., Palestine. (Building previously noted to cost \$80,000.)

W. Va., Princeton.—Mrs. L. T. Steger let contract to J. K. Peck, Athens, W. Va., to erect hotel; 64x66 ft.; ordinary construction; tin roof; hot-water heat; electric lighting; cost \$20,000; A. F. Wyssong, Archt., Princeton; brick contract let to W. B. More and cut stone to T. Thomas, both of Princeton. (Previously noted.)

MISCELLANEOUS

Fla., Pompano.—Hall.—McNab Bros. let contract to erect store and hall. (See Stores.)

Fla., Sarasota.—Clubhouse.—Women's Club is reported to have let contract at about \$4100 to Geo. L. Lysat to erect clubhouse and library; English half timber exterior; easement windows; French doors; assembly hall; H. N. Hall, Archt., Sarasota. (Lately noted.)

Fla., Seabreeze.—Pavilion.—M. Sholtz, Prest. of Central Florida Ry., let contract to D. F. Fuquay, Daytona Beach, Fla., to erect bathing pavilion; 60x150 ft.; 35 bathrooms; swimming pools.

Ga., Augusta.—Home.—Trustees of Mary Warren Home let contract to L. E. Palmer, Augusta, to erect building; 2 stories and basement; brick; cost \$15,000; G. Lloyd Preacher, Archt., Augusta. (Previously noted.)

Ky., Louisville.—Hope Rescue Mission let contract to erect building to replace structure lately noted burned; 4 stories; reinforced concrete faced with red brick; 45x87 ft.; steam heat; ventilating apparatus; chapel to seat 500; accommodations for 150 men on two upper floors; cost \$15,000.

Mo., St. Louis.—Sanitarium.—Missouri Baptist Sanitarium is reported to have let contract to Murch Bros. Construction Co., St. Louis, to erect addition to hospital at 919 N. Taylor Ave.; 4 stories; 150 ft. frontage; fireproof; cost \$150,000; Isaac S. Taylor, Archt., St. Louis. (Previously noted.)

Tex., Houston.—Pavilion.—Battle Ground Commrs. let contract to Nellis C. Jensen, Houston, to erect pavilion on San Jacinto Battlefield; fireproof; concrete; cost about \$8000; C. H. Page & Bro., Archts., Austin. (Lately noted.)

SCHOOLS

Fla., Elfers.—J. H. Borina has contract to erect school at Elfers and one at Seven Springs.

Fla., Panama City.—Bay County Board of Public Instruction is reported to have let contract to F. M. Dobson, Montgomery, Ala., to erect school; cost \$25,000.

Ga., Atlanta.—Oglethorpe University let contract to W. H. George, Atlanta, on percentage basis to erect building; plans for structures being developed; Morgan & Dillon and W. T. Dinwiddie, Asso. Archts., Atlanta; Chas. W. Leavitt, Jr., Landscape Engr., New York. (Lately noted.)

Ga., Summerville.—Summerville School Dist. let contract at \$14,000 to Dupree & Son, Rome, Ga., to erect high school. (Lately noted.)

Ky., Grays.—Trustees let contract to Kelsay & Ault to erect school; cost \$6000; R. F. Graf & Sons, Archts., Knoxville, Tenn.

La., Baton Rouge.—City will expend \$13,500 (cost without mechanical equipment) to erect school; 87x52 ft.; brick; mill construction; composition roof; lighting to cost \$250; Benj. J. Goodman, Archt., 833 N. Boulevard, Baton Rouge; contract (lately noted) let to Cassano & Thibodeaux, Baton Rouge.

Md., Cumberland.—Allegany County Commissioners let contract to Wm. J. Mosley, Cumberland, to erect 8-room school building; fireproof; built-up roof; hot-air heat; cost \$30,000; Holmboe & Lafferty, Archts., Clarksburg, W. Va., and Grand Central Palace Bldg., New York. (Lately noted.)

Okla., Mounds.—School Board of Falwell School Dist. No. 12, Okmulgee County, let contract to Butterworth & McCharacher to erect addition to school; 24x32 ft. (Lately noted.)

Okla., Oklahoma City.—B. D. Snider, 932 E. 6th St., Oklahoma City, is reported to have contract to erect school.

Okla., Stillwater.—Agricultural and Mechanical College let contract to Holmboe Co., State National Bank Bldg., Oklahoma City, to rebuild dormitory damaged by fire; loss \$15,000. (Lately reported burned.)

S. C., Cheraw.—School Trustees, A. T. Gaston, Chrmn., let contract to J. A. Parker, Cheraw, to erect school; 85x48 ft.; ordinary construction; metal roof; cost \$7800; W. J. Wilkins, Archt., Florence, S. C.; plumbing contract let to H. E. Longley, Florence, at \$1372; heating, G. G. Ray & Co., Charlotte, N. C., at \$1823. (Lately noted.)

Tenn., Chattanooga.—T. S. Moudy & Co., Chattanooga, general contractor to erect gymnasium for University of Chattanooga, let following sub-contracts: Excavation, Chris Bateman, Boyce St.; concrete and tile, Wesco Co., Market St.; lumber, Lookout Planing Mills; mill work, Willingham & Co.; roofing, W. L. Karman; slate, Sloan & Co.; painting, Hayes & Son; plastering, Frank Sossman; plumbing, Jos. Garner; electric work, Terrell Hedges Co., all of Chattanooga; Richard G. Deason, Archt., Chattanooga. (Previously noted to cost \$40,000.)

Tex., Houston.—Hildebrandt School Dist. No. 25 has plans by Lane & Dowdy, Houston, for school; 2 stories and basement; Howard & Lorins, Contrs., Houston.

STORES

Ala., Birmingham.—Morris Real Estate Co. is reported to have let contract at \$7170 to R. V. Labarre, Birmingham, to alter and repair building.

D. C., Washington.—Jas. S. Barber estate let contract to W. A. Kimmel, 511 Evans Bldg.,

Washington, to repair store building at 614 Pennsylvania Ave. and 615 B St. N. W.; ordinary construction; slag roof; heating and lighting in place; repairs to elevator, \$300. (Lately noted to expend \$5500 for repairs.)

Fla., Pompano.—McNab Bros. let contract to Mr. Hardin, Pompano, to erect business block; 2 stories; lower floor for stores; upper floor for hall.

Fla., St. Augustine.—Mrs. Jessie Lynn let contract to Louis Leonardi, St. Augustine, to erect brick addition to store.

Ga., Atlanta.—J. G. Oglesby, Jr., let contract to Pittman Construction Co., Atlanta, to alter building at 19-21 N. Pryor St.; cost \$17,500.

La., New Orleans.—Albin Speiss let contract to Chas. G. P. Geier, New Orleans, for 1-story brick business building; cost \$4277.

Mo., St. Louis.—G. Meyersick let contract to August Beck, St. Louis, to alter store and dwelling at 1915 S. Taylor St.; cost \$2200.

Mo., St. Louis.—A. B. Morris let contract to R. J. Loyd, St. Louis, to erect 2-story store and apartment-house at 4000 Lafayette Ave.; cost \$6000.

S. C., Charleston.—Sires & Westendorff will erect store and dwelling at 114 St. Philip St.; cost \$4000; 3 stories; tin roof; has plans by and let contract to S. E. Hendry, Charleston, on percentage basis. (See Machinery Wanted.)

Tex., Dallas.—Watson Co., Dallas, general contractor to remodel about 40 store fronts in connection with widening Elm St., let following subcontracts: Steel work, Mosher Mfg. Co.; electric wiring, Clower Electric Co.; plumbing, Harry Kahn; glass, Texas Glass & Paint Co.; cement stone, Architectural Supply Co.; mill work (part only), Conkling Planing Mill—all of Dallas; excavation, Vilbig Bros.; tile roof, Myers & Noyes. (Total cost of improvements lately noted as \$300,000.)

Tex., Plainview.—Barker & Wimm let contract to erect 2-story brick business building; 25x100 ft.

Tex., West.—West Development Co. let contract to E. R. Roberts, Hillsboro, Tex., to erect 5 business buildings; 2 stories; 25x80 ft.; face brick; plate-glass fronts; composition roof; cost \$15,000; materials furnished by Cameron & Co.; Roy E. Lane, Archt., Waco, Tex.

Va., Roanoke.—Richardson-Wayland Electrical Corporation, Roanoke, has contract at about \$10,000 for electrical work on building at Jefferson and Church Sts., for which general contract was let to J. P. Pettyjohn & Sons, Lynchburg; total cost about \$120,000. (Previously noted.)

THEATERS

D. C., Washington.—Eastern Amusement Co. let contract to W. M. Staley, 402 10th St. S. E., Washington, to repair one-story brick theater at 515 8th St. S. E.; cost \$3000; Frank Upman, Archt., Woodward Bldg., Washington.

WAREHOUSES

Ga., Atlanta.—Central Bank & Trust Corp. let contract to H. J. Carr & Co., 1224 Candler Bldg., Atlanta, to erect cotton warehouse in sections; 100x100 ft. each; wood frame; corrugated siding and roof; cost \$4000 each. (Lately noted.)

Ga., Columbus.—Columbus Mfg. Co. let contract to Frank A. Pierce, Columbus, to erect cotton warehouse; 54x160 ft.; mill construction; tar and gravel roof; steam piping from present system; cost \$6000; material practically purchased; capacity 1500 bales.

Ky., Louisville.—National Concrete Construction Co., Louisville, general contractor to erect warehouse for fireproof storage Co., let following subcontracts: Wrecking and excavating, Henry Bickel Co.; stone work, Peter Burghard Stone Co.; sheet metal, J. F. Wagner & Sons; mill work, Alfred Struck Co., all of Louisville; iron work, Jos. Halstead & Co., Chicago; construction begun. (Previously noted to cost \$40,000.)

Tex., Taylor.—Taylor Bonded Warehouse Co., T. W. Marse, Prest., let contract to Ernest Graber, Taylor, to erect cotton warehouse; 190x270 ft.; galvanized-iron roof; cost \$3000; Henry Struve, Archt., Taylor. (Lately noted inceptd., \$5000 capital.)

RAILROAD CONSTRUCTION

RAILWAYS

Ala., Florence.—Solon Jacobs of Birmingham is reported elected Prest. of the Florence & Huntsville Interurban Ry. Co., which proposes to build line from Florence to Athens and Huntsville, Ala., about 75 mi., and Thurston H. Allen of Florence, V.-P. and

Gen. Mgr. T. W. Pratt is also a vice-president. Alan L. Jenkins of Birmingham is Secy. and Treas. Others mentioned as interested are Col. N. F. Thompson and Humphrey Read, the latter of Philadelphia.

Ala., Gadsden.—Preliminary survey will be made for the contemplated Gadsden and Cen-

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ter railway. Loui Hart and C. L. Marsh at Gadsden may give information.

Ark., Bigelow.—Fourche River Valley & Indian Territory R. R. Co. has been authorized to increase capital to make extension. F. H. Hartshorn is Pres. at Bigelow.

Ala., Guntersville.—Nashville, Chattanooga & St. Louis Ry. Co. is reported taking steps to construct its proposed extension from Guntersville to Hobbs Island. Hunter McDonald is Ch. Engr. at Nashville, Tenn.

Fla., Clearwater.—Franchise has been granted in Clearwater to the proposed electric railway from St. Petersburg to Tarpon Springs. Dr. H. A. Murphy and others are interested.

Fla., Maytown.—Florida East Coast Ry. is reported to have completed track on its Kissimmee Valley line to Tangle and Okechochee and is now surfacing and otherwise preparing it for service.

Ga., Lula.—Lula-Homer R. R. Co. is chartered to build a 15-mile line from Lula, in Hall county, to Homer, in Banks county. Connection will be made at Lula with the Southern Ry. Incprts.: S. S. Carter, W. A. Boling, E. E. Chapman, Joel Coffee of Lula, and others.

La., New Orleans.—Construction of the Orleans-Kenner Electric Ry. from New Orleans to Kenner, La., and the St. Charles Parish boundary is almost completed. Johnson & Co., Inc., Harry K. Johnson, Pres., is the contractor. Officers of the railway company are E. A. Stanford, Pres.; Andrew Fitzpatrick, V.-P.; John Lorenz, Secy. and Treas. 499 Tulane-Newcomb Bldg., New Orleans. This corrects a late report.

Mo., Joplin.—O. R. Symmes will build an extension of a spur track on his coal lands southwest of Joplin.

N. C., Old Fort.—J. M. Charles is building a narrow-gauge railroad from Old Fort to Catawba Falls to get out timber.

Okla., Cushing.—Contracts have been awarded for material to build the line of the Cushing Traction Co. from Cushing to Drumright, 13 mi. Cushing Construction Co. is the contractor for construction. Frank C. Brown of Independence, Kans.; Richard D. Long of McAlester, Okla., who is V.-P. and Gen. Mgr., are interested. E. M. Graham is consulting engineer.

Tex., Brenham.—W. W. Umbenhauer & Co., 15th and Chestnut Sts., Philadelphia, are reported in communication with the Brenham Young Men's Business Assn., Frank Eberle, Secy., with reference to the projected interurban railway from Brenham to Independence and other points, about 100 mi.

Tex., Dayton.—Ed Kennedy of Houston, Tex., and H. Fox, Engr., are investigating around Dayton regarding plan to build an interurban railway to connect Houston and Beaumont.

Tex., Johnson City.—Meetings have been held at Stonewall and Blanco and bonuses granted looking to the construction of a railroad from Johnson City to Austin. John D. Kinney of Johnson City or the Austin Chamber of Commerce may give information.

Tex., Lott.—Scott D. Ross, Amicable Bldg., Waco, Tex., may be able to give information about the proposed railroad from Waco to Cameron via Lott, about 50 mi.

Tex., May.—Steps are to be taken immediately by M. J. Healy, Sweetwater, Tex., to secure rights of way for an extension of the Brownwood, North & South Ry. from May to Vernon, Tex. Bonus, terminals and townsites are to be secured.

Tex., McKinney.—Survey completed and right of way obtained for proposed electric railway of the McKinney, Bonham & Paris Interurban Assn., R. H. Waddill of McKinney, Chrmn., under direction of Fred A. Jones, Sumpter Bldg., Dallas, Tex., Ch. Engr. Address Mr. Waddill for further information.

Tex., Rosenberg.—The Commercial Association Committee on the Gulf-Freeport & Northern R. R. has engaged Darwin Musick to make survey for the desired entrance of the road to Rosenberg. The railroad company, of which C. L. Sharp, Marshall, Tex., is Mgr., has built 20 mi. of grade south from Fairchilds. Joseph Catron and others of Rosenberg compose the committee.

Tex., Van Horn.—The Van Horn Valley Land & Ry. Co. is reported to have let contract to King & Runquist of Duluth, Minn., to build its proposed line from Van Horn or Lobo to Crew Flat on the New Mexico boundary, about 100 mi. Work to begin immediately. Joseph Irbey of Van Horn and others are interested, including R. H. Owen of Minneapolis, Minn.

Va., Narrows.—J. J. Boxley & Son, Roanoke, Va., have been given contract by Norfolk &

Western Rl. to grade branch from Narrows up Wolf Creek, 5 mi., including tunnel 300 ft. There will be three steel and concrete bridges; estimated value of contract \$275,000. J. E. Crawford, Roanoke, is chief engineer.

W. Va., Morgantown.—Morgantown Interstate Ry. is reported to have let contract to Joseph Vandergrift of New York for construction from Morgantown to Point Marion, Pa., to cost (estimated) \$225,000. L. S. Brady, Fairmont, W. Va., being engineer.

W. Va., Roncove.—Survey is made for the proposed Cherry River & Southern narrow-gauge railroad to run from the junction of Cranberry and Gauley rivers to Roncove, 35 or 40 mi. Line will connect Cur-

tain, Bays Ferry and Brooks Bridge. Construction contract will be let as soon as possible. H. L. Kirtley, Geo. W. McClinic and W. G. Mathews of Charleston, W. Va.; A. Bringardner of Columbus, O., and Saml. W. Richey of Cincinnati are interested.

STREET RAILWAYS

La., New Orleans.—New Orleans and Pontchartrain line will be converted from steam dummy to electric operation. Address New Orleans Ry. & Light Co., Hugh McCloskey, Chrmn.

Tex., Mexia.—The Commercial Club is reported to have street-railway franchise and will build.

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

"WANTS"

Air Compressor.—L. S. Colyar, James Bldg., Chattanooga, Tenn.—Belt-driven 12x12-in. air compressor.

Alum.—St. Louis Junk & Hide House, 414 S. State St., Jackson, Miss.—Addresses of dealers in alum; wants prices.

Aluminum Cooking Utensils, etc.—W. Murray Hogan, Mgr., Nashville Manufacturers' Assn., 213 Third Ave. N., Nashville, Tenn.—Addresses of manufacturers of aluminum cooking utensils and lining for fireless cookers.

Arch and Retaining Walls.—Office City Engr., Chas. E. Bolling, Richmond, Va. Bids until Nov. 6 to construct arch under Broad St. and reinforced concrete retaining walls of approaches; plans, specifications, etc., on application and deposit of \$10; bidders required to examine location.

Bank Fixtures.—First National Bank of Jayton, Jayton, Tex.—Prices on fixtures for bank.

Brackets (Lamp, Oxidized Copper).—Guy V. Barnes, Sr., Kittrell, N. C.—Addresses of manufacturers oxidized copper brackets for lamps; also manufacturers of lamps, both brass and glass.

Bridge Construction.—Warren County Commrs., Vicksburg, Miss.—Bids until Nov. 3 to construct steel bridge across Big Black River at Holt's Ferry. J. D. Laughlin, Clerk.

Bridge Construction.—St. John County Commrs., W. Wallace Snow, Clerk, St. Augustine, Fla.—Bids until Nov. 16 to construct concrete bridge; plans and specifications obtainable from Clerk of Circuit Court, or J. B. McCrary Co., St. Augustine.

Briquetting Machinery.—Mississippi Oil & Gas Co-operative Joint Stock Co., Reform, Miss.—Machinery for manufacturing briquettes from lignite coal.

Building Materials.—Franklin Hotel, G. W. Ford, owner, Louisville, N. C.—Prices on building materials.

Building Materials.—Sires & Westendorff, Charleston, S. C.—Prices on building materials for \$4000 store and dwelling.

Building Material.—Cinchfield Ice & Coal Co., Johnson City, Tenn.—Prices on building material of all kinds, including lumber.

Building Material and Equipment.—Reuter & Harrington, Frost Bldg., San Antonio, Tex.—Prices on building materials and equipment for \$350,000 tubercular sanitarium.

Cable, etc.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Nov. 17 to furnish miscellaneous lot rubber insulated lead-sheathed conductor, schedule 7475; delivery Annapolis; 5000 ft. single rubber insulated lightning and power wire, schedule 7478; delivery Brooklyn; bids Nov. 24 to furnish 492 lbs. phosphor bronze wire, schedule 7502; delivery Norfolk.

Canning Machinery, etc.—B. R. Butler, care Butler's Real Estate & Development Co., Roseboro, N. C.—Addresses of manufacturers of canning outfits; also of can manufacturers and can label dealers.

Cars.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Nov. 17 to furnish 36 railroad cars, all steel, with bumpers,

5-ton capacity, schedule 7486; delivery Philadelphia; bids Nov. 24 to furnish 4 ft. standard cars, schedule 7488; delivery Mare Island.

Cars.—"Contractor," care of Carolina Foundry & Machine Co., Winston-Salem, N. C.—Wants to lease, with privilege of buying, 6 small dump cars; give description, condition, lease and purchase price.

Carts, Cans and Sweepers.—Ray M. Mackey, Purchasing Agent, San Antonio, Tex.—Bids until Nov. 9 to furnish carts for carrying demountable cans and modern street sweepers. Information on application.

Castings.—See Machine-Shop Equipment, Sand Springs Machine Co.

Clock, etc.—Treasury Dept., Office of O. Wenderoth, Supervising Archt., Washington, D. C.—Bids until Nov. 16 to furnish clock, etc., for present tower of U. S. postoffice and courthouse at Danville, Va., in accordance with drawings and specifications, copies of which are obtainable at this office.

Concrete Work, etc.—Henderson County Drainage Dist., No. 1, Oquawka, Ill.—Bids received Nov. 12 for furnishing and placing concrete work, steel reinforcements, abutments, excavations, refilling, sheet piling, etc., for supporting tracks of C. B. & Q. R. R., bounding drainage district; plans and specifications office County Clerk, and on file with Harman Engineering Co., Engrs., Peoria, Ill.

Concrete Reinforcement.—See Wire (Reinforcement), W. T. Dickey.

Condensers.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Dec. 1 to furnish one surface condenser, 1000 sq. ft. and 350 sq. ft. surface condenser, with air and circulating pump and accessories, schedule 7473; delivery Mare Island.

Corn and Meal Mills.—H. T. Killingsworth, Fort Gaines, Ga.—Will install corn and meal mills.

Cotton Machinery.—Roy M. Nell, Rock Hill, S. C.—Addresses of manufacturers of machinery for making absorbent cotton.

Cylinders, Disks, etc.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Nov. 24 to furnish 900 cylinders, sal ammoniac, 1.85 in. O. D. and miscellaneous lot cork disks from first-class solid slabs, 3240 soft rubber gaskets, schedule 7503; miscellaneous lot seamless drawn tubing and 2305 lbs. black steel tubing, schedule 7501; delivery Norfolk.

Dynamite, etc.—Panama Canal, F. C. Boggs, Purchasing Officer, Washington, D. C. Bids until Nov. 5 for dynamite, safety fuse, blasting caps, detonators, corrugated roofing, soft steel plates, angles, car wheels, hawsps, fire brick, water coolers, stepladders, tarpaulins, rubber bands, blankbooks, paper, shipping tags, white zinc, white lead, red lead, Japan drier, asphaltum varnish and paints; blanks and general information relating to this circular (No. 874) may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans, and 1086 North Point St., San Francisco; also from U. S. Engr. offices in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cin-

anti, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash.

Drainage System.—Commrs. Harris County Drainage Dist. No. 7, C. L. Anderson, Chrmn., Aldine, Tex.—Bids until Nov. 21 at office of County Judge, Courthouse, Houston, Tex., to construct drainage canals; successful bidder to purchase total bond issue of \$140,000; plans and specifications on file with County Clerk, Houston; blank forms for bidders and detailed plans and specifications furnished by Secy., E. A. Charpiot, Humble, Tex., or J. S. Burk, Drainage Engr., 1515 Walker Ave., Houston.

Electrical Equipment.—Dept. of Justice, F. H. Duchay, Supt. of Prisons, Washington, D. C.—Bids until Nov. 20 to furnish at U. S. Penitentiary, Leavenworth, Kan., electric feeders for light and power to east main cell wing; copies of specifications obtainable on application.

Electric Incandescent Lamps.—Office of Chas. Wilson, City Storekeeper, 311 Courtland St., Baltimore, Md.—Bids at office City Register, City Hall, until Oct. 28 for electric incandescent lamps or bulbs; bids to be in accordance with specifications to be had at office of City Storekeeper.

Electric-light and Water Plants.—City of West Monroe, La., N. G. Tippitt, Mayor.—Opens bids Nov. 14 for electric plant construction and water-works enlargement; plans include 75 H. P. capacity; 31x50-ft. brick building; crude oil engine; 10,000-gal. oil storage tank; plans by C. A. Reece, Shreveport, La.

Electric Motors.—John M. Greene, Drexel Bldg., Philadelphia, Pa.—Data and prices on second-hand electric motors; 25 to 100 H. P., for 250-volt; D. C.; details first letter.

Electrical Machinery.—American Co-operative Coal Mining Co., 511 Lyric Bldg., Birmingham, Ala.—75 K. W. direct-connected generator; voltage 250; second-hand, good condition.

Engine (Gasoline).—See Saw (Cross-cut Portable), Oliver Bros. Purchasing Co.

Engines (Steam Hoist).—John M. Greene, Drexel Bldg., Philadelphia, Pa.—Data and prices on second-hand steam hoisting engines; D. C., single drum; 75 to 100 H. P.

Farm Supplies.—Cedar Ridge Farming & Cattle Co., 822 Holland Bldg., St. Louis, Mo.—Prices on farm supplies.

Films (Moving Picture).—Miss Julia P. Rogers, 740 Brown-Marx Bldg., Birmingham, Ala.—Addresses of manufacturers of moving picture films, who have lately started business in South.

Gas Machinery.—Mississippi Oil & Gas Co-operative Joint Stock Co., R. L. Smith, Secy., Reform, Miss.—Machinery to generate gas (for cooking, heating, lighting, etc.) from lignite coal.

Garbage-Disposal Plants.—City of Miami, Fla.—Bids at office City Clerk until Nov. 19 to construct garbage and refuse disposal plant; plans and specifications office of John R. Baylis, Engr., 704 Farley Bldg., Birmingham, Ala., or obtainable from B. H. Klyce, 52 Real Estate Bldg., Miami, on deposit of \$5.

Grading, etc.—Treasury Dept., O. Wenderoth, Supervising Archt., Washington, D. C.—Bids Nov. 10 to grade, construct roads, etc., in grounds around Hygienic Laboratory; drawings and specifications on application at this office.

Hardware, etc.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Nov. 17 to furnish 3327 lbs. galvanized steel bolts, square heads and plain hexagon nuts, and 2599 galvanized cast-iron washers, schedule 7482; delivery Newport, R. I.; 70 breast drills, 855 pipe wrenches and 504 screw wrenches, schedule 7490; 30,000 grommets and jackknives, each, schedule 7481; delivery Brooklyn; 21,700 lbs., type C, steel hull rivets, schedule 7486; delivery Washington; 1440 lin. ft. wire mesh copper cloth, 16 mesh per in., 0.0165 in. diam. of wire, schedule 7488; delivery Puget Sound; 476 lbs. rolled naval brass nuts, miscellaneous tool steel tapen pins and soft black steel rivets, 850 taper pins and soft black steel rivets, 850 eye, schedule 7502; delivery Norfolk.

Heating Plant.—C. T. Morrison, Hickory, N. C.—Prices on steam-heating plant for 6-room and basement dwelling.

Hoists (Electric).—John M. Greene, Drexel Bldg., Philadelphia, Pa.—Data and price on second-hand single-drum electric hoist, 15 to 50 H. P., equipped with motors for 250-volt D. C.; also hoist for A. C. current, 2-phase, 230-volt.

Hospital Equipment.—See Building Materials and Equipment. Reuter & Harrington, Frost Bldg., San Antonio, Tex.

Insulating Material.—Cinchfield Ice & Coal Co., Johnson City, Tenn.—Prices on insulating material.

Lamps (Brass and Glass).—See Brackets, Guy V. Barnes, Sr.

Levee Construction.—Mississippi River Com., First and Second Dists., Room 20, Custom-house, Memphis, Tenn.—Bids until Nov. 2 to construct 3,341,000 cu. yds. levee work in Upper and Lower St. Francis and White River Levee Dists.; E. M. Markham, Major, Engrs.

Lighting System.—Navy Dept., Bureau Yards and Docks, H. R. Stanford, Chief of Bureau, Washington, D. C.—Bids until Oct. 31 to install street-lighting system at Naval Hospital, Newport, R. I. Information on application.

Lime.—St. Louis Junk & Hide House, 414 S. State St., Jackson, Miss.—Addresses of manufacturers of lime; wants prices.

Locomotive.—Hitchcock Mfg. Co., Frick Bldg., Pittsburgh, Pa.—Prices on second-hand 6 or 7-ton mine motor for 42-in. gauge track, 3 ft. 4 in. to 3 ft. 6 in. high.

Locomotive.—Navy Dept., Bureau Yards and Docks, H. R. Stanford, Chief, Washington, D. C.—Bids until Nov. 11 for narrow-gauge, saddle-tank switching locomotive, delivered naval station, Pearl Harbor, Hawaii; specifications (2118) on application to Bureau or to commandant of naval station named.

Locomotive.—"Contractor," care of Carolina Foundry & Machine Co., Winston-Salem, N. C.—Wants to lease, with privilege of buying, standard gauge locomotive, capable of handling 100 tons on 4 per cent. grade; give full particulars, description, condition, lease and purchase price.

Lumber (White Oak).—Portsmouth Cotton Oil Refining Corp., Portsmouth, Va.—Prices on white oak; large dimensions as F. L. 9x14 in., 9x10 in. and 12x14 in.; carload and less than carload lots.

Lumber.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Nov. 17 to furnish 51,000 ft. yellow pine lumber, schedule 7487; delivery Key West.

Lumber.—See Building Material, Clinchfield Ice & Coal Co.

Machine-Shop Equipment.—Tlaga Gravel Co., Alexandria, La.—New or first-class second-hand 24-in. lathe and shaper, with set of tools; drill press and set of drills; emery wheel; cut-off saw; power fan for forge; air motor drill.

Machine-Shop Equipment.—Sand Springs Machine Co., Sand Springs, Okla.—Lathes, boring mills, crank shafts, connecting rods, drop forgings, suction pumps, coils, spark plugs, and steel and gray iron castings.

Machine Tools.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Nov. 24 to furnish three 4-jawed reversible steel chucks, schedule 7496; drilling machine and one-gear power press, schedule 7496; delivery Washington; 3 steel derricks, schedule 7497; delivery Philadelphia; 2 flat turret lathes, 24x24 in., schedule 7468; delivery Norfolk; automatic machine for finishing propeller blades, flask boring outfit for second roughing, motor driven, schedule 7472; 2 automatic machines for bar work, 2½x3½ in., schedule 7467; delivery Newport; car-handling winch, schedule 7466; delivery Brooklyn.

Mantels, Tiles, etc.—R. L. Graveley, Florence, S. C.—Correspondence (view to agency) with manufacturers of mantels, tiles and grates.

Marble, etc.—First National Bank of Jayton, Jayton, Tex.—Prices on marble tile and stone for bank building.

Metals.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Nov. 17 to furnish 1150 lbs. soft sheet brass, 8000 lbs. hard sheet copper, schedule 7493; delivery Charleston, S. C.; 6200 lbs. round hard drawn copper bar, commercial lengths, schedule 7493; delivery Norfolk; 94,400 lbs. black steel plates, schedule 7484; 2698 lbs. rolled naval brass plates and 4698 lbs. rolled naval brass disks; bids Nov. 24 to furnish miscellaneous lot steel angles and bars, miscellaneous lot best grade, soft and ductile open-hearth basic steel, and class C steel plates, schedule 7501; delivery Norfolk.

Motor Trucks.—O. B. Quin, Mayor, and Selectmen, McComb, Miss.—Consider bids and make purchase of motor fire truck at Board meeting Nov. 17; invite manufacturers to have representatives present.

OIL.—Panama Canal, F. C. Boggs, General Purchasing Officer, Washington, D. C.—Bids until Nov. 23 to furnish fuel oil for the year ending Dec. 31, 1915; blanks and general information relating to this circular (No. 875) may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans, and 1086 North Point St., San Francisco; also from U. S. Engr. offices in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash.

Painting.—Maryland State Roads Com., O. E. Weller, Chrmn., 601 Garrett Bldg., Baltimore, Md.—Bids until Nov. 2 for painting Conowingo bridge over Susquehanna River between Cecil and Harford counties; bridge is all steel structure, 1500 ft. long; paint will be furnished by State Roads Com. at bridge site; specifications on application.

Paving.—Committee on Public Works of Board of Bond Trustees, S. C. Harrison, Jr., Chrmn., Jacksonville, Fla.—Bids until Nov. 23 to construct about 1906 sq. yds. Dolarway pavement with cement curb on Boulevard north of 8th St.; plans and specifications on file with City Recorder and Committee on Public Works; proposal forms and specifications, together with necessary information, may be obtained from Chief Clerk, Engr. Dept., Main and Orange Sts.

Paving.—Bell County Commrs.' Court, W. E. Hall, Auditor, Belton, Tex.—Bids until Nov. 13 to construct streets of brick, concrete, asphaltic concrete or other material at Temple; \$140,000 available; plans, etc., on file in office Mr. Hall and E. A. Kingsley, Engr., City National Bank Bldg., Temple.

Paving, etc.—City of Greenwood, Miss., R. H. Hicks, Clerk.—Bids Nov. 3 for paving, curbing, gutters and storm sewers on Carrollton Ave.; plans and specifications on file.

Pipe.—Ward's Plow Works, Fayetteville, N. C.—60 ft. 8-in. galvanized pipe.

Pipe.—Board of Purchase, E. R. Conant, Purchasing Officer, Savannah, Ga.—Bids opened Oct. 27 to furnish following sewer pipe: 500 ft. 12-in. pipe, 500 ft. 10-in. pipe, 1000 ft. 8-in. pipe, 50 8x4 Y's, 4 12x12 Y's, 4 12x10 Y's, 4 8x10 Y's; for further information apply to E. R. Conant, Purchasing Officer.

Piping.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Nov. 17 to furnish 2500 ft. galvanized wrought pipe, ¾-in. extra strong, schedule 7477; delivery Annapolis.

Polishing (Marble) Machinery.—Anniston Marble & Vault Co., W. E. Box, Prest., 123 E. 10th St., Anniston, Ala.—Will need small polishing machine.

Printing Machines (Wood).—Knox Washboard Mfg. Co., 126 E. Cumberland Ave., Knoxville, Tenn.—Addresses of manufacturers of machinery for printing on wood (for washboards) about 5x10 in., ¾ in. to 1 in. thick, such as washboard backs.

Pumps.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Nov. 24 to furnish verticle triplex double-acting pump, schedule 7496; delivery Washington; bids Dec. 1 to furnish 3 water system centrifugal pumps, complete, schedule 7474; delivery Mare Island.

Pumps.—See Machine-Shop Equipment, Sand Springs Machine Co.

Rails.—"Contractor," care of Carolina Foundry & Machine Co., Winston-Salem, N. C.—Wants to lease, with privilege of buying, 1½ or 2 mi. track; give description, condition, lease and purchase price.

Road Construction.—Collin County Commrs.' Court, McKinney, Tex.—Bids until Nov. 18 to construct 7.6 mi. of McKinney-Celina highway; to include bridges, culverts, 22,600 cu. yds. earth excavation and embankment, 6000 lbs. reinforcing steel, 6000 lbs. steel shapes, etc.; plans, specifications, etc., obtainable from County Engr.

Road Construction.—Buncombe County Commrs., Asheville, N. C.—Bids Nov. 6 to construct 7 mi. bituminous macadam road; 16 ft. wide; Chas. H. Neal, Engr., Asheville.

Road Construction.—Cullman County Commrs., Cullman, Ala.—Bids until Nov. 17 to grade, drain and surface with slag and chert about 1½ mi. Bremen Rd.; expenditure \$6542.26; W. S. Keller, State Highway Engr., Montgomery, Ala.

Road Construction.—Sanitary & Drainage Com., Charleston, S. C.—Bids until Oct.

30 to supply material and cover Belgian block roadway out of Charleston for about 4 mi. with mixture of asphalt and sand; information on application; Reid Whitford, Engr.

Road Construction.—Bibb County Commissioners, Centerville, Ala.—Bids until Nov. 25 to grade, drain and surface with chert portion of Centerville and Blockton Rd., beginning at end of present State-aid Rd.; expenditure \$10,542.26; W. S. Keller, State Highway Engr., Montgomery, Ala.

Road Construction.—Alfred Risko, County Highway Engr., St. Charles, Mo.—Bids until Nov. 12 to furnish material and repair with crushed gravel or limestone macadam and screenings Boon's Lick, Cross State, Salt River, Droste and other roads; blank proposal forms and further information obtainable from Mr. Risko.

Saw (Cross-cut Portable).—Oliver Bros. Purchasing Co., 71 Murray St., New York.—Portable cross-cut saw for sawing tree trunks; complete with small gasoline engine weighing about 100 lbs.

Sawmill.—Hanes Chair & Table Co., Mocksville, N. C.—Prices on second-hand short log band sawmill.

Sawmill.—Cummings & Addison, Box 42, Claremont, Va.—Data and prices on new or second-hand portable sawmill convenient to James River; will rent or buy; give details and terms first letter.

Sewers.—See Paving, etc., City of Greenwood, Miss.

Sewer Construction.—Sewer Improvement Dist. No. 1, Argenta, Ark.—Bids on Nov. 5 for sewer construction; estimated cost \$300,000; for specifications apply Lund & Hill, Engrs., Little Rock, Ark. (Former bids rejected.)

Sewer Construction.—City of Tulsa, Okla.—Bids at office of City Auditor until Nov. 5 to construct sanitary sewers in Dist. No. 14; interior diameter of sewer, 8 in.; plans, profiles and specifications on file with T. C. Hughes, City Engr.

Sewer Construction.—Comms. Dist. of Columbia, Washington, D. C.—Bids until Oct. 30 to construct sewers; 3800 lin. ft. sewers, 12 in. to 3 ft. in diam.; proposal forms, specifications and information obtainable from Chief Clerk, Engr. Dept., 427 Dist. Bldg.

Sewer Construction, etc.—Board of Control, Norfolk, Va.—Bids until Oct. 29 (instead of Oct. 22 as originally advertised) to furnish and lay sewer and water pipes on Armistead Rd., W. Ghent Blvd., etc.; plans and specifications on file at City Engr.'s office; estimated cost, \$5000; further facts lately noted; W. H. Taylor, Jr., Asst. City Engr.

Sewer Construction.—City of Memphis, Tenn.—Bids at office of C. C. Pashby, City Clerk, until Oct. 27 to construct sanitary sewer on 4th St. from Market to Monroe Ave., and to furnish all material, etc., excepting pipe and cast-iron rims and covers; 3340 lin. ft. 24-in. pipe, 450 lin. ft. 18-in. pipe, 200 lin. ft. 15-in. pipe, 9550 cu. yds. excavation, 650 lin. ft. tunnel, 89.6 cu. yds. brick masonry in 16 manholes, inverted siphon complete; plans, profiles and specifications may be seen at office of City Engr.; \$5 deposit required to secure plans, etc.; E. H. Crump, Mayor.

Slate.—L. J. Roach, Tulsa, Okla.—Prices f. o. b. Haskell, Okla., on slate 27 in. by 3 ft. or 5 ft. 27 in. and 2 ft. 27 in.

Stonekote.—Baker & Holmes Co., Jacksonville, Fla.—30 tons of stonekote; wants addresses of manufacturers.

Tubing (Tin).—J. G. King, Burlington, N. C.—Addresses of manufacturers of tin tubing of 1¼ to 1½ in.; also tees, elbows and vees for same.

Vault Doors.—First National Bank of Jayton, Jayton, Tex.—Prices on granite vault doors for bank.

Wallpaper, etc.—R. L. Graveley, Florence, S. C.—Correspondence (view to agency) with manufacturers of wallpaper and wallboards.

Water Meters.—Sewerage and Water Board, Geo. G. Earl, Supt., New Orleans, La.—Bids until Oct. 31 to furnish water meters; blank proposal forms furnished on application at office of Board.

Water-works.—Water Commrs., John C. Cook, Chrmn., Columbus, Ga.—Bids until Nov. 17 to construct water-works, which will embrace about 15 mi. cast-iron pipe, 4 to 24 in. in diam.; centrifugal pumps, filtration plant, tower and tank, power station, by-

drants, gate valves and other appurtenances; plans and specifications on file at offices of Board in Columbus, and J. L. Ludlow, Engr., Winston-Salem, N. C.

Water-works.—See Sewer Construction, etc.

Water-works.—See Electric-light and Water Plants, West Monroe, La.

Wire (Reinforcement).—W. T. Dick-ey, Box 101, Northwest, Va.—Addresses of manufacturers of wire for concrete reinforcement.

Wire Rope.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Nov. 24 to furnish 58,711 galvanized steel wire rope, 3-16 in. diam., 6 strands, 21 wires each, schedule 7502; delivery Norfolk.

Yarns.—John D. Coleman, Lookout, Ky.—Addresses of manufacturers of yarns for knitting.

FINANCIAL NEWS

The MANUFACTURERS RECORD invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

FINANCIAL CORPORATIONS

Ala., Pell City.—Pell City Bank & Trust Co. has begun business with \$15,000 capital and \$32,000 surplus. L. Cooke, Prest.; Mrs. J. H. Still, Cash., and J. L. Aders, Asst. Cash.

Fla., West Palm Beach.—The Stuart Realty & Investment Co. has made application for charter; capital \$10,000; Otto Stypmann, Prest.; D. H. Williams, V.-P.; Chas. A. Porter, Secy.-Treas.

N. C., Fletcher.—Bank of Fletcher Incptd., capital \$10,000. Directors: A. H. Miller, Prest., Greer, S. C.; Hugh V. Walker, Cash., Fletcher, N. C.; L. G. Miller, Duncan, S. C. Business has begun.

Okla., Porum.—National Bank of Commerce is chartered; capital \$25,000. M. B. Chilcutt, Prest.; Ralph Reed, Cash. This is a conversion of the Bank of Commerce.

S. C., Orangeburg.—Edisto National Bank is chartered; capital \$100,000; surplus \$50,000; B. H. Moss, Prest.; William L. Glover, Cash.; directors, B. H. Moss, P. A. Smoak, J. W. Smoak, W. L. Mosely, W. R. Lowman, Sal Kohn, W. F. Fairry, Thos. C. Doyle and J. M. Oliver. This is a conversion of the Edisto Savings Bank.

Tex., Allen.—First National Bank of Allen is chartered; capital \$25,000. S. P. Bush, Prest.; James Garfield, Cash. This is a conversion of the Allen State Bank.

Tex., Dallas.—Teal Investment Co. chartered; capital \$7500; incorporators, O. A. Teal, J. H. Power, W. W. Graham.

Tex., Nixon.—First National Bank is approved; capital \$25,000. P. H. Tom, H. C. Fristoe, Geo. J. Schleicher, Eugene Wilson and M. L. Johnson, organizers.

Tex., Petty.—Citizens' National Bank chartered; capital \$50,000. A. Collier, Prest.; Jack K. Adams, Cash. This is a conversion of the Citizens' State Bank.

Tex., Quitman.—First National Bank is chartered; capital \$50,000. W. M. Llyod is Prest.; James D. Harris, Cash. This is a conversion of the First State Bank of Quitman.

Va., Bedford City.—Citizens' National Bank has begun business; capital \$50,000. S. S. Lambeth, Jr., Prest.; J. A. Clark, V.-P.; R. E. White, Cash., and R. Q. Lowry, Asst. Cash.

NEW SECURITIES

Ala., Birmingham.—Ordinance has been prepared providing for the issuing of \$66,500 5½ per cent. bonds for the purpose of paying outstanding contractors' estimates for public improvements. Geo. B. Ward is Prest. Board of Commrs.

Ala., Gadsden.—Bids will be opened Nov. 2 for \$7000 6 per cent. 10-year \$500 bonds.

[For Additional Financial News, See Page 62.]

Mechanics-Mechanics National Bank

South and Water Sts. BALTIMORE, MD.
DOUGLAS H. THOMAS, President
JNO. B. RAMSAY, V.-P. and Chm. Bd. of Dir.
WM. INGLE, Vice-President
JOHN B. H. DUNN, Cashier
Capital \$2,000,000 Deposits \$21,670,000
Surplus and Profits \$2,175,000

Accounts of Banks, Bankers, Corporations and Individuals solicited.

We invite correspondence.

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The First National Bank OF KEY WEST, FLA.

United States Depository and Disbursing Agent
Capital \$100,000
Surplus and Undivided Profits 40,000
A general banking business transacted
Special attention given to collections

FIRST NATIONAL BANK

RICHMOND, VIRGINIA

Capital and Surplus, - - \$3,000,000

JNO. B. PURCELL, President

JNO. M. MILLER, Jr., Vice-Pres.

W. M. ADDISON, Cashier

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The First National Bank

17 South St., Baltimore, Md.

Capital, - - - \$1,000,000

Surplus and Net Profits, 450,000

Deposits, - - - 8,500,000

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Delaware Trust Company

Wilmington, Delaware

INCORPORATING under broad, liberal, safe and stable Delaware laws. A fully equipped department for proper organization and registration of corporations. BANKING AND TRUST department gives special attention to out of town customers' accounts.

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J. ERNEST SMITH, President and Gen. Counsel.

WM. G. TAYLOR, Vice-Pres. and Treasurer.

HARRY W. DAVIS, Vice-Pres. and Secretary

W. W. PUSEY, 2nd. Title and Real Estate Officer

The National Exchange Bank OF BALTIMORE, MD.

Hopkins Place, German and Liberty Streets

Capital \$1,000,000

August 9th, 1913, Surplus and Profits, \$764,091.00

OFFICERS

WALDO NEWCOMER, President.

SUMMERFIELD BALDWIN, Vice-Pres.

R. VINTON LANSDALE, Cashier.

C. G. MORGAN, Asst. Cashier.

Accounts of Mercantile Firms, Corporations, Banks, Bankers and Individuals Invited.

JOHN NUVEEN & CO.

First National Bank Building CHICAGO

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Write us if you have bonds for sale.



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On any problem which can be solved by obtaining exact knowledge of conditions, our service department can help you.

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Contemplating the Establishment of Industrial Enterprises

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W. B. LIVEZEY, President

OLD DOMINION LAND COMPANY
NEWPORT NEWS, VA.

ESTABLISHED 1864

State, City and Corporation Securities Purchased Direct or from Holders.

Temporary Loans Arranged on Such Collateral.

Deposits, Dec. 31, 1912, \$ 9,132,372.15 Increase, \$1,970,862.54
Dec. 31, 1913, 11,103,234.69

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MERCANTILE TRUST & DEPOSIT CO.

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A. H. S. POST, President

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Opposite South Terminal Station
BOSTON, MASS.

European Plan.
Rates Moderate.
Absolutely Fireproof.

Free Transfer Baggage from and to Station.
Terminal of Trains from South and West.

DAVID REED, Manager

dated Oct. 23, 1914. W. G. Bellenger is Mayor and Jos. Balfour City Clerk.

Ala., Georgiana.—The \$14,000 water-works and \$10,000 school bonds recently reported sold were purchased by J. B. McCrary & Co., Atlanta, Ga.

Ark., Argenta.—\$300,000 sewer bonds have been purchased by St. Louis parties. Jas. P. Faucette is Mayor.

Ark., Harrison.—Election is to be held Dec. 22 to vote on \$90,000 sewer and water bonds. Address The Mayor.

Fla., Bradentown.—A mass-meeting is to be held to consider the question of reducing the amount of bonds voted last June from \$60,000 to \$45,000; \$30,000 to be used for water system and \$15,000 for refunding city debt. It is also proposed to increase the rate of interest from 5 to 6 per cent. Wm. Kean is City Clerk.

Fla., Deland.—Dec. 15 election is to be held to vote on \$50,000 6 per cent. bonds for street improvements and paying outstanding indebtedness. Bonds will probably run 20 years. Address Bond Trustees.

Fla., DeLand.—Bids will be received until 7.30 P. M. Nov. 16 for \$12,500 5 per cent. 10-20-year bonds Special Tax School Dist. No. 14, Volusia county. Geo. P. Crouch is Chmn. Board of Public Instruction.

Fla., Marianna.—\$35,000 water and light and \$3000 street 5 per cent. 30-year bonds are voted; \$18,000 sewer bonds defeated. Paul Carter is Mayor.

Fla., New Smyrna.—Election is to be held to vote on the following bonds: \$47,000 water, \$12,000 sewer and \$4000 for funding city's indebtedness. Address The Mayor.

Fla., Port Tampa City.—\$17,000 6 per cent. 20-year street-improvement bonds have been purchased at par by R. L. Davis of Tampa. R. E. Davis is City Clerk.

Fla., Salerno.—\$37,000 Salerno Dist., Palm Beach county, road and bridge bonds are voted. R. H. Rousseau is Chmn. Board of County Commrs. at Boynton, Fla.

Fla., Tampa.—Bids will be received until noon Nov. 7 for \$500,000 5 per cent. Hillsborough county \$1000 road bonds; dated Oct. 1, 1913; maturity Oct. 1, 1943. W. P. Culbreath is Clerk Board of County Commrs.

Fla., Tavares.—All bids received Oct. 17 for \$50,000 6 per cent. Lake county road \$500 bonds were rejected, and new bids will be received until noon Nov. 21. H. H. Duncan is Clerk.

Fla., Titusville.—The report that the Board County Board of Education proposes to call a bond election is denied by Edwin E. Macy, Supt., Eau Gallie, Fla.

Ga., Augusta.—Bids will be received until noon Nov. 12 for \$250,000 flood-protection bonds. Address The Mayor.

Ga., Canton.—Bids will be received at any time for \$25,000 school, \$5000 water and light and \$4000 city hall 5 per cent. bonds. Address Olin Fincher, City Clerk.

Ga., Donalsonville.—Bids will be received until noon Nov. 18 by J. F. Brown, Secy. and Treas. Board of Trustees, for \$15,000 6 per cent. 22-year \$1000 building bonds Donalsonville School Dist. No. 13, Decatur county; dated Jan. 1, 1915; maturing annually on and after Jan. 1, 1930. Further particulars will be found in the advertising columns.

Ga., Helena.—\$13,000 5 per cent. 30-year water-works and electric-light bonds were defeated Oct. 13.

Ky., Hazard.—Election is to be held in Perry county Nov. 3 to vote on good-roads bonds. Address County Judge.

Ga., Rome.—Election is to be held in Floyd county Nov. 3 to vote on bridge bonds. Address County Commrs.

Ga., Lyerly.—\$10,000 of school bonds have been sold. Address Board of Education.

Ga., Summerville.—\$15,000 school bonds have been sold. Address Board of Education.

Ky., Georgetown.—Election is to be held Nov. 3 to vote on \$20,000 sanitary sewer bonds. K. Stone is Mayor and J. H. Cleary, Clerk.

Ky., Lexington.—Ordinance has been prepared providing for the sale of \$7729.26 of 6 per cent. street-improvement bonds. J. E. Cassidy is Mayor.

Ky., Owensboro.—Election will probably be held to vote on \$50,000 city hall construction bonds. Address The Mayor.

Ky., Princeton.—Election is to be held in November to vote on \$15,000 electric-light bonds. Address The Mayor.

La., Glenmora.—\$25,000 building bonds

Glenmora School Dist. No. 27, Rapides Parish, are voted. Address Board of Education.

La., New Orleans.—Election is to be held Nov. 7, it is reported, to vote on \$3,000,000 of bonds for building a lake-shore seawall. Address The Mayor.

La., Port Allen.—Election is to be held in West Baton Rouge parish Nov. 19 to vote on \$12,400 5 per cent. 20-year bonds Bayou Bourbeaux Drainage Dist. Ernest Vieknair is Pres. Board of Commrs.

Miss., Bude.—\$350,000 6 per cent. municipal building and school bonds have been purchased at par by Brookhaven parties. Address The Mayor.

Miss., Columbus.—\$50,000 6 per cent. bonds Road Dist. No. 2, Lowndes county, were purchased by Hochler, Cummings & Prudden, Toledo.

Miss., DeKalb.—Bids will be received until noon Dec. 8 by Sam O. Bell, Clerk Board of County Supervisors, for \$6000 6 per cent. 5-20-year \$100 and \$500 bonds Tucker and Damascus Consolidated School Dist., Kemper county.

Miss., Forest.—\$25,000 6 per cent. Scott county road bonds were recently purchased at par by the Farmers and Merchants' Bank, Forest.

Miss., Indianola.—No bids were received Sept. 14 for the \$5000 6 per cent. 10-25-year bonds Road Dist. No. 1, Sunflower county. A. P. Stubblefield is County Clerk.

Miss., Magnolia.—Fourth Road Dist., Pike county, is offering for sale \$100,000 6 per cent. 25-year bonds. W. T. Denman is Secy., McComb, Miss.

Miss., Meridian.—The election to vote on \$50,000 Lauderdale county road bonds will be held Nov. 2. W. R. Pistole is Clerk Chancery Court.

Miss., Pleasant Ridge, P. O. Laurel.—Of \$2000 school bonds recently voted, \$1700 have been sold to local parties. Address Board of Education.

Mo., Alton.—Election is to be held Nov. 14 to vote on \$95,000 city-hall, \$16,000 fire-department and \$55,000 pari-vianduct bonds. Address The Mayor.

Mo., Montrose.—The \$6000 electric-light-plant bonds voted July 27 are 5-20-year 5 per cent; denomination \$100 and \$500. Wm. J. Brownsberger is Mayor.

Mo., Monett.—\$20,000 5 per cent. 10-20-year \$500 water-works system improvement bonds are being offered at private sale. Address P. Martin, Mayor.

N. C., Tryon.—Election is to be held Nov. 28 to vote on \$25,000 6 per cent. water bonds, dated Nov. 1, 1914; maturing Nov. 1, 1934. E. E. Missidine is Mayor and W. F. Smith Town Clerk.

Okl., Boswell.—The \$36,000 6 per cent. 25-year water-works bonds recently reported sold were purchased at par by A. J. McMahon of Oklahoma City. E. Irby is Town Clerk.

Okl., Poteau.—\$60,000 5 per cent. 20-year \$1000 LeFlore county bridge bonds to be voted on Nov. 3 have been purchased by C. Edgar Honnold, Oklahoma City, Okla.; dated Dec. 1, 1914; maturity Dec. 1, 1934. A. B. Green is County Clerk.

S. C., Branchville.—Bids will be received until noon Nov. 16 by P. E. Dukes, Clerk of Commrs. Public Works, for \$10,000 6 per cent. 20-40-year electric-light \$500 bonds.

S. C., Columbia.—No election will be held Nov. 3 to vote on \$1,000,000 State hospital bonds, the bill being killed at the last session of the General Assembly. B. L. Blaise is Governor.

Tenn., Camden.—\$30,000 5 per cent. 20-year high-school bonds have been purchased by a bonding company through L. M. Weathers Co., Archt., of Memphis, Tenn.

Tenn., Dresden.—Election is to be held Nov. 21 to vote on \$27,000 of water and light bonds. Address The Mayor.

Tenn., Jackson.—Bids will be received until 11 A. M. Nov. 12 for \$75,000 6 per cent. 5-20-year \$500 bonds Drainage Dist. No. 3, Madison county. Address A. W. Stovall, County Judge. Further particulars will be found in the advertising columns.

Tenn., Morristown.—\$10,000 5 per cent. 20-year funding bonds have been purchased by H. C. Speer & Sons Co., Chicago.

Tenn., Pikeville.—\$97,000 5 per cent. Bledsoe county pike bonds have been purchased at \$75 premium by the First National Bank of Pikeville and the First National Bank of Chattanooga.

Tenn., Ripley.—Oct. 29 election is to be held to vote on \$30,000 school bonds. Address Board of Education.

Tenn., Rives.—\$10,000 6 per cent. 10-30-year school bonds have been purchased by Kissel, Kinnicutt & Co., Chicago. W. A. McNeill is Mayor.

Tenn., Rogersville.—Bids will be received until noon Nov. 21 by Albert Lyons, Roy Miller and A. L. Burem, committee, for \$15,000 5 per cent. 1-18-year Hawkins county bridge bonds.

Tex., Austin.—The Attorney-General has approved the following securities: \$65,000 Dist. No. 2 and \$10,000 Dist. No. 12 5 per cent. 20-40-year school bonds El Paso county; \$30,000 street improvement and \$35,000 sewer 5 per cent. 10-25-year bonds Uvalde; \$50,000 5 per cent. 30-40-year Dist. No. 1 and \$75,000 5½ per cent. 30-year Dist. No. 3, Montgomery county, road bonds; \$1950 6 per cent. 10-20-year Concho county bridge-repair bonds; \$20,000 5 per cent. 10-30-year bonds Bexar County Common School Dist. No. 25; \$25,000 5 per cent. 10-40-year bonds Coolidge Independent School Dist. of Limestone county; \$10,000 5 per cent. 20-40-year bonds San Patricio County Road Dist. No. 2.

Tex., Barstow.—No bids were received Oct. 13 for the \$475,000 6 per cent. bonds Ward County Irrigation Dist. No. 1. J. H. Miller is Dist. Clerk.

Tex., Bronson.—\$10,000 5 per cent. 40-year Independent school district bonds are being offered. C. E. Casey is Secy. of the School Board.

Tex., Clifton.—\$2500 5 per cent. 10-40-year Clifton School Dist. bonds have been purchased by John H. Wood, Dallas. R. S. Clement is Secy. School Board.

Tex., Cotulla.—La Salle county is reported to have sold \$40,000 road bonds. Address County Commrs.

Tex., Fort Worth.—\$180,000 of high school bonds are voted. Address Board of Education.

Tex., Hot Wells.—\$30,000 Independent School Dist. school-building bonds have been authorized. Address Board of Trustees.

Tex., Laredo.—Bids will be received until Nov. 3 by A. V. Woodman, City Secy., for \$24,000 5 per cent. 20-40-year storm sewer \$1000 bonds; dated Oct. 1, 1914.

Tex., Magnolia Park, P. O. Houston.—Election is to be held Nov. 28 to vote on \$150,000

bonds for water-works, street and other improvements. Address W. J. McKenzie, R. P. D. No. 1, Houston.

Tex., Mt. Pleasant.—No bids were received Oct. 12 for the \$16,000 5 per cent. 40-year street-improvement bonds. B. B. Peterman is City Secy.

Tex., Sherwood.—\$20,000 5½ per cent. 10-40-year Irion county road bonds have been purchased by H. C. Speer & Sons, Chicago, at 100.50.

W. Va., Benwood.—Question of issuing \$50,000 water-plant bonds is under consideration. Address The Mayor.

Louisiana Constitutional Amendments.

A constitutional amendment to exempt from taxation all money on hand or on deposit, also loans by homestead associations to members, secured by stock, will be voted on in Louisiana November 3. The present practice of taxing these items the same as other property has resulted in driving large sums of money out of the State, according to reports, to be loaned in States where no tax is imposed. Another amendment proposes to tax the incomes of foreign banks and money lenders who simply loan money in Louisiana, without opening branch banks of deposit.

A Bit of Journalistic Enterprise.

A piece of journalistic enterprise that impressed the members of the Richmond convention of the American Bankers' Association was the publication in Richmond daily during the sessions of the convention of issues of the Daily Banker and Stockholder of New York. These special issues at Richmond ended on October 17 with an issue containing more than 100 pages, covering most comprehensively the papers and the proceedings of the convention, presenting half-tone pictures of many of the leading members and a full list of the delegates.

Chicago, Rock Island & Pacific R.R. Co.

TO THE

HOLDERS OF COLLATERAL TRUST BONDS OF 2002

The undersigned Committee has adopted a plan and agreement designed to secure the distribution among bondholders depositing under the plan, of pledged stock of the Operating Company upon their compliance with the plan and agreement, copies of which may be obtained on application to the Depositary under the plan and agreement.

In order to participate in the plan outstanding bonds must be deposited with CENTRAL TRUST COMPANY OF NEW YORK, the Depositary under the plan and agreement, at its office, 54 WALL STREET, NEW YORK CITY. Bonds must be deposited in transferable form, and if coupon bonds must be accompanied by the coupons maturing on and after May 1, 1914, and any tax in connection with such deposit imposed by any law in force at the time of such deposit. For all bonds deposited the Depositary will issue its certificates of deposit, in bearer form, with privilege of registration. Application will be made in due course to list such certificates of deposit upon the New York Stock Exchange.

In the present disturbed financial conditions it is impossible for the Committee to provide any considerable amount of cash to be paid to non-depositing bondholders. The only way, therefore, that the Committee can safely bid for, or can be sure of acquiring, the pledged stock, is by having deposited with it practically all of the outstanding bonds.

THE GRAVITY OF THE SITUATION MUST BE APPARENT TO EVERY BONDHOLDER, AND THERE IS A PRESSING NECESSITY FOR IMMEDIATE DEPOSIT OF BONDS IF BONDHOLDERS DESIRE THE CONSUMMATION OF THE PLAN AND THE DISTRIBUTION OF THE PLEDGED STOCK TO DEPOSITING BONDHOLDERS AS PROVIDED IN THE PLAN.

Dated New York, October 10, 1914.

JOLINE, LARKIN & RATHBONE,
CRAVATH & HENDERSON,
Counsel.
C. E. SIGLER, Secretary,
54 Wall Street, New York City.

JAMES N. WALLACE,
BERNARD M. BARUCH,
JAMES BROWN,
HENRY EVANS,
CHARLES HAYDEN,
FREDERICK STRAUSS,
Committee.

RAILROAD EQUIPMENT FOR SALE

Two first-class baggage, mail and express cars and four passenger coaches, all in fine condition, ready for prompt delivery. Pennsylvania standard.

O. R. WHITNEY
39 Cortlandt St. NEW YORK, N. Y.

Cupola for Sale

One Cupola with doors and legs complete—60-inch inside diameter of shell. Has been little used. In good condition.

PLATT IRON WORKS
Dayton, Ohio

A PROGRESSIVE RAILROAD.

Georgia Southern & Florida Reports Industrial and Agricultural Growth.

In the annual report of the Georgia Southern & Florida Railway it is stated that the territory traversed by the company's lines continued during the year, which ended June 30, to develop encouragingly. The following new commercial and industrial enterprises were established: 61 business houses, 5 banks, 5 hotels, 5 lumber mills, 3 woodworking plants, 1 flour mill and 7 miscellaneous industries. Others are in course of construction. Water and light plants and sewer systems were installed in nine cities and towns.

Substantial progress was made by the land and industrial department of the road in its work of attracting settlers, and, with the co-operation of the department of farm improvement work, advanced farming methods have been introduced and adopted. Thousands of acres of cut-over land have been put under the plow for the first time and are being developed not only in cotton, but in oats, corn, forage crops and truck. Raising of livestock has been encouraged and in a number of places dipping vats have been put in use to eradicate the cattle tick. As there is still much land to be had at reasonable prices, it is confidently expected that the region will continue to develop to the advantage of the railroad in increasing traffic.

The income statement shows operating revenues \$2,596,548, increase as compared with the preceding year \$29,658; operating expenses \$2,111,962, increase \$72,824; net operating revenues \$484,586, decrease \$43,165; net revenue after deficit from outside operations \$483,238, decrease \$44,174; operating income after taxes \$347,018, decrease \$47,556; total gross income \$508,477, decrease \$29,412; total available income after deductions \$453,562, decrease \$37,898; balance of income over charges \$150,252, decrease \$45,225; balance over dividends on preferred stock \$61,851, decrease \$45,225; balance carried to credit of profit and loss \$80,574, decrease \$44,779; total balance to credit of profit and loss \$1,543,052, net increase \$77,358.

The railroad from Ashturn, Ga., to Camilla, Ga., 51 miles, formerly owned by the Gulf Line Railway Co., was acquired by purchase through the Hawkinsville & Florida Southern Railway, the capital stock of which is owned by the Georgia Southern & Florida.

North Carolina Minerals.

North Carolina produced minerals in 1913 valued at \$3,739,696, an increase of \$370,773 over 1912, according to a statement prepared by the United States Geological Survey in co-operation with the State Survey. North Carolina is the leading producer of mica in the United States. The white muscovite mica produced in North Carolina is highly prized for its transparency, and is generally recognized as the standard mica of the country, equal to any other in the market. It is especially adapted for the manufacture of gas lamp chimneys and lamp shades and for glazing heating stoves. Only clear mica of good grade and perfect cleavage is used in the glazing trade. Smaller sizes are used in the manufacture of electrical apparatus, and scrap mica is ground and sold for use in the manufacture of lubricants, wall paper, etc. The mica produced in North Carolina in 1913 was valued at \$267,913, against \$256,549 in 1912.

Other mineral products of the State are monazite, clay products, granite, limestone,

marble, sandstone, gold, copper, lead, silver, zinc, iron, talc, barytes, feldspar, abrasive garnet, gems, lime, millstones, mineral waters, sand and gravel, and silica.

Resources of Texas.

La Grange, Tex., October 20.

Editor *Manufacturers Record*:

Texas' resources are incomparably rich, but are neglected. Now is the time for Uncle Sam to learn to make his own things. In case we should get to war with foreign nations, we would be less dependent on imported things. We have been so careless that we did not care to bother with new developments of our natural resources. We have enough of those things which grow on top of the ground, but we pay too little attention to such things as are in and under the ground. We could make a great deal more pretty and useful things of clays, since we have more and finer clays than any part of the world, yet in 1912 we imported \$9,721,853 worth of clayware and imported \$1,629,102 worth of kaolin alone, while Texas has more and finer kaolin than any foreign country. But nobody cares to bother with it, since importation is so handy.

Texas has more and better fuller's earth than any foreign country, and is much cheaper and easier to mine, and requires no cleaning, washing and preparing for use like the foreign earths require, yet in 1913 we imported \$146,101 worth of fuller's earth. Texas alone has more and better feldspar and pumice dust than any foreign land, and it is much easier to produce and grind, yet no one cares to go after it, while millions of dollars' worth is used annually for porcelain and enamelware alone.

Texas has more and better volcanic potash clays suitable for soaps, cleansers and potash extraction right on the surface of the earth than other countries have deep under ground, yet I know of only one place where it is dug and placed on the market.

We have at least a half-dozen paint materials, besides lead and zinc, which should be looked after. Texas medical clays and minerals are simply wonderful, and plenty of it to supply the whole world. In 1913 we imported \$2,029,680 worth of manganese, while Texas has enough to supply the United States, yet I do not know of any attempts being made to mine the Texas stuff. I could mention many other minerals of Texas which are sadly neglected.

J. C. MELCHER.

Literary Notes.

Scientific Management. A Collection of the more Significant Articles describing the Taylor System of Management. Edited by Clarence Bertrand Thompson, lecturer on manufacturing in Harvard University. Publisher, Harvard University Press, Cambridge, Mass. Price \$4.

This volume, the first in a series of Harvard Business Studies, is a recognition of the call from many quarters for greater detailed information regarding certain phases of scientific management than is given in the standard works of Frederick W. Taylor and H. L. Gantt, the inspiring pioneers in the application of scientific management, or production engineering, to industrial organization. Perhaps no other subject has begotten in as short a time as extensive literature as has scientific management. Volume after volume has appeared dealing with various sides of the question and developing new applications, and to the formal volumes have been added a mass of articles in the

technical and general press dealing with the social, economic and industrial bearings of the movement. Many of these special articles which have been published in the past 15 years are either out of print, or, having been published in periodicals having a class circulation, are hardly accessible to the average layman interested in knowing how the practical science has actually worked out in the industries or in other lines. The editor of this volume has endeavored, by careful selection of material, condensations wherever practicable and comment only when necessary for better understanding or for correction of errors of fact or of theory, to bring together the best articles available as a useful supplement to the works of Taylor and Gantt. He has drawn upon the *Engineering Magazine*, the *Quarterly Journal of Economics*, *Machinery*, *Review of Reviews*, *Industrial Engineering*, *System*, *Railway Age Gazette*, *Journal of Political Economy*, the *American Machinist* and the publication of scientific bodies for most of his material, the high character of which is clearly indicated to students of the subject by the names of such authors as Foster Cardullo, Henry P. Kendall, Lieut. G. J. Meyers, U. S. N., Charles Day, A. W. Shaw, James Mapes Dodge, Wilfred Lewis, Frederick W. Taylor, H. K. Hathaway, Lieut. Frank W. Sterling, Carl G. Barth, H. L. Gantt, Robert Thurston Kent, Oberlin Smith, William J. Cunningham, H. F. Stimpson, F. Lincoln Hutchins, Dexter S. Kimball, Sue Ainslee Clark, Edith Wyatt, Henri Le Chatelier and C. Bertrand Thompson. A comprehensive survey of the literature of scientific management introduces the series of articles, and 16 pages are filled with a bibliography of the subject. This volume is likely to have use as a textbook, but it will probably have as wide a use as a reference book.

Iron Ores. Their Occurrence, Valuation and Control. By Edwin C. Eckel. Publisher, McGraw-Hill Book Co., New York.

This exceedingly practical and valuable volume, enriched with maps and diagrams and full of authoritative statistics, represents the results of experience in many years of professional activity, and essays to discuss iron ores not merely in their geologic and technical relations, but also in their more general relations to industrial conditions. In the first place is considered the manner in which the wide dissemination of the natural abundance

of iron is concentrated into workable ore deposits, the sedimentary ores being given space more nearly commensurate with their overwhelming importance than has been the common practice. This is followed by chapters on basal factors in ore valuation, prospecting and tonnage determination, mining conditions and costs, furnace and mill requirements, composition and concentration of iron ores and ore prices, profits and markets, with some consideration of the effect of time on the valuation of iron-ore properties. The third section of the volume deals in detail with the iron ores of the United States generally, of the Lake Superior district, of the South, of the Northeast and of the West of this country, of Newfoundland and Canada, of West Indies, Mexico and Central America, of South America, of Europe and of Asia, Africa and Australia. The last 90 pages of the book treat of the extent, probable duration and ownership and control of American iron-ore reserves, the iron-ore reserves of the world, world competition in iron and steel, and questions of public and private policy in dealing with ore reserves.

The Science and Practice of Management. By A. Hamilton Church. Publisher, the Engineering Magazine Co. Price \$2.

In an attempt to formulate such fundamental facts and such fundamental regulative principles as may be hereafter developed into a true science of management the author of this latest addition to The Works Management Library of the Engineering Magazine has endeavored to ascertain the fundamental facts of production, not from the viewpoint of costs, but from the viewpoint of management. Instead of trying to throw light on the nature of expense he has endeavored to throw light on the nature of organization. His thesis is the outgrowth of many years' study of management, and was projected in the hope of determining, if possible, what organic elements are to be found in industrial activity, to get at fundamental principles, to the end that existing forms of management can be scientifically analyzed and classified. Resulting from such analysis should be a revelation of the natural lines of development and the natural groupings of the different kinds of skilled concern, and an indication of the limitations of the latter, based not upon hard and fast rules worked out in some one individual practice in a particular plant or industry, but upon the application of the universal rules.

INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers whether they are advertisers or subscribers or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

Pine Timber for Sale in Fee Simple.

Two hundred and ninety million feet of long-leaf yellow pine timber, virgin primitive forests, on undulating land, affording minimum logging cost, and which is located on a railroad giving low rate for both export and interior, is offered for sale by the Pine Land Co., P. O. Box 889, New Orleans, La. The timber is said to average 15,000 feet per acre, and is big, tall, straight pine, free from red heart, and will be sold at a low price on terms of 25 per cent. cash and balance at 5 per cent.

"Exide" Batteries for Saxon Automobiles.

The Saxon Motor Car Co. of Detroit, Mich., has adopted the "Exide" battery, manufactured by the Electric Storage Battery Co.

of Philadelphia, Pa., as its standard for use with electric starters to be furnished with Saxon Model A roadsters as extra equipment. This "Exide" battery is known as type 3-XC-13-1 and will be used for starting, lighting and ignition. It has a capacity at the 20-minute rate of 93 amperes, weighs less than 46 pounds and is 9 1/2 inches long, 7 1/2 inches wide and 9 1/2 inches high.

Cummers Asphalt Plant Sales.

The Carey-Reed Company of Lexington, Ky., has purchased a Cummer road plant, manufactured by the F. D. Cummer & Son Co. of Cleveland, O., which it will use on the asphaltic concrete work of the road contract recently secured at Nicholasville, Ky. The plant consists of three units: power,

[Continued on Page 67.]

Classified Opportunities

MEN WANTED

WANTED—Reputable, responsible and energetic agents for sale of good reliable steam shovels. Territory and compensation liberal to right parties. Address No. 1631, care Manufacturers Record, Balto., Md.

SPECIALTY SALESMEN calling on engineers, mills, public institutions to handle high-grade engine-room specialties on liberal commission basis. Hustler can make big money. Address now C. W. Adams, 1248 West 70th St., Cleveland, Ohio.

WANTED—Competent mechanical draftsman for mine, mill and smelter work; steady position for temperate, active man. Write, giving experience, references and salary expected. Bertha Mineral Co., Austinville, Va.

AGENTS WANTED among supply dealers and salesmen for an exceptional house-lighting machine, suitable for small homes as well as large; simple, durable, economical; satisfaction guaranteed to customers; has excellent selling points; a live proposition. Write for terms. The Alexander N. Milburn Co., Baltimore, Md.

AGENCIES WANTED

NEW YORK, Pennsylvania and New England Agency wanted for a staple article by New York man with excellent connections. State full particulars and terms. No. 1634, care Manufacturers Record, Balto., Md.

WANTED—Manufacturers' account, side line, exclusive sale, State of Florida, that gives me connection with steam plants and machinery. Address No. 1642, care Manufacturers Record, Balto., Md.

MANUFACTURERS' AGENT, experienced and established, invites investigation by manufacturers desiring live representative, financially and otherwise responsible, who will guarantee satisfactory business in volume and quality. If you have something to sell, write me. Manufacturers' Agent, Box 424, Richmond, Virginia.

YOUNG BUSINESS MAN, responsible financially and otherwise, who has recently sold out his manufacturing business, would like to make connection as Southern agent for well-rated company on a commission basis. No. 1644, care Manufacturers Record.

WANTED—Sales agency for all lines pertaining to builders' specialties; East Tennessee as territory; can furnish satisfactory references to interested concern; modern warehouse facilities. Address Daniel Briscoe, Jr., 325-327 State St., Knoxville, Tenn.

SITUATIONS WANTED

FURNACE MANAGER, technically trained, twenty years' operative and executive experience covering ore and coal mines, coke ovens, blast furnaces; up-to-date system and methods; produce economical results. Address No. 1638, care Manufacturers Record, Balto., Md.

MANUFACTURERS interested in South American and foreign markets can secure assistance young man (24) now with international banking firm; knows banking, shipping, languages; secretarial, managerial or representative capacity. Address No. 1640, care Manufacturers Record, Balto., Md.

WANTED—Position as Southern manager or salesman for some A-1 corporation by young man thoroughly capable of handling division office; has traveled the South for ten years and has wide acquaintanceship among architects, engineers, contractors, purchasing agents, and those in charge of mechanical ends of railroads. Can furnish unquestionable references to business ability, character, financial standing, etc. Speaks Spanish, and would not object to South American trips. Class A concerns only need answer. Address No. 1643, care Manufacturers Record, Balto., Md.

MECHANICAL ENGINEER—Tech. graduate with 17 years' experience in designing, contracting, machinery sales and plant operation, embracing both engineering and business end, open for position with manufacturer, contractor, architect or engineers. Specialist in heating, ventilating, power plant and building equipment. Address No. 1641, care Manufacturers Record, Balto., Md.

AN ENGINEER open for engagement; 15 years' experience civil, mechanical lines and handling business in hydro-electric and steam-power and manufacturing plants; office and outside good references. Dandridge Cox, 588 Park Place, Brooklyn, N. Y.

EDUCATIONAL

RENSSELAER POLYTECHNIC INSTITUTE, TROY, N. Y.—Courses in Civil, Mechanical, Electrical and Chemical Engineering and General Science, leading to the degree of Civil Engineer (C.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Ch.E.), and Bachelor of Science (B.S.). Also special courses. Splendidly equipped new engineering laboratories. Send for catalogue to Registrar.

RATES AND CONDITIONS

Rate 20 cents per line per insertion. Minimum space accepted, four lines. Maximum space accepted, 25 lines. In estimating the cost, allow seven words of ordinary length to a line. When the advertisement contains a number of long words, proper allowance should be made. Terms: Invariably cash with order, check, postoffice or express order or stamps accepted. No display type used. Questionable or undesirable advertisements will not be accepted. The assistance of our readers in excluding undesirable advertisements is requested. We reserve the right to refuse any advertisement. No patent medicine, whiskey or mining stock advertisements accepted. Rate for special contracts covering space used as desired within one year as follows: 100 lines, 18c per line; 300 lines, 16c per line; 500 lines or more, 15c per line.

SHEET-IRON SPECIALTIES

WANTED—Sheet-iron specialties and stampings to manufacture on contract; parts or complete. Send sample or sketch. Also have silo attractive agency proposition. C. C. Fouts Tank & Silo Co., Middletown, Ohio.

MODELS

MODELS MADE FOR INVENTORS.—General machine work. Designing and perfecting. Developing automatic devices and machinery. In a position to do all kinds of light tool and machine work. Prices reasonable. Estimates cheerfully given. Ideal Machine Works, 64 Ann Street, New York City.

BUSINESS OPPORTUNITIES

A GOOD LIVE LAND MAN to take one-half interest in the best selling contract on well-located lands in the South; very little capital required, as the business is well established; should clear \$100,000 in four years. References required and furnished. Write for particulars. Address No. 1604, care Manufacturers Record, Balto., Md.

INFORMATION any subject. Congress, corporations, investigations, Gov't bids, trade opportunities. Miscellaneous data and statistics. Researches. Daily news letter. General Information Bureau, Box 1341, Wash., D. C.

FOR SALE—Half interest in sash and door factory, planing mill and lumber yard. Easy terms to responsible party who can put in some cash and take active charge. Located in good live town in Florida with good line of regular customers and supply of lumber nearby. Address No. 1632, care Manufacturers Record, Balto., Md.

FOR IMMEDIATE SALE, owing to ill-health, old-established general merchandise business in excellent suburb 11 miles from Washington, on main line railway and electric line; coal, wood, feed, meat, etc.; electric power; modern appliances throughout; horses, wagons, etc.; excellent opening for lumber business; doing good business, with plenty of scope for increase; store, stabling, sheds, etc., on 2 acres; lease, with option of purchase. 718 Evans Bldg., Washington, D. C.

CLAY TRACT of 41 acres on Tidewater & Western R. R. at crossing of county road about one mile from Bermuda on James River, known as Epps' Crossing. Tract has been tested over its entire surface, showing clay exists to the depth of 4½ feet and covers entire property with overburden of 3 to 9 inches. The State Geologist reports as being the best found on the coastal plain, suitable for pipe, tile, pavers, fireproofing, and stiff-mud and dry-press face brick. Burns a dark cherry red, drying easily and safely.

This valuable clay bed, with a manufacturing site at Chester, for sale reasonable. The manufacturing site, consisting of between 3 and 4 acres, is on A. C. L. R. R. at junction of Tidewater & Western R. R., affording splendid shipping facilities to North or South by A. C. L. R. & W., S. A. L. T. & W., or by water. With proper development should prove a good money-maker. Full particulars upon request. Address Central Realty Co., Richmond, Va.

I HAVE large income, investment and business properties everywhere to exchange. Want farms, coal and timber land to sell or exchange. What have you? Arthur M. Connor, 223-4 Oxford Bldg., 726 14th St. N. W., Washington, D. C.

WANTED—To borrow \$5000 on a brick building, 90x100 feet, two stories high, and costing to build \$14,000; has three stores and offices; interest, 7%; payable in from three to five years. Address W. S. R., P. O. Box 23, Varnville, S. C.

WANTED—To connect with individuals who will be willing to invest \$15,000 in a very successful graphite company in the best section in the South. The company is most successful in selling its product, and with additional capital can enjoy increased sales at a large profit. The best references can be given. Address P. O. Box 732, Atlanta, Ga.

FACTORY SITES

FACTORY SITES and wharfe on the Houston Ship Channel, where ocean ships are now landing, with rail facilities. Write for literature on freight rates and special offers. Tracts in any size. W. G. Burchfield, 704 Scanlan Bldg., Houston, Texas.

INDUSTRIES WANTED

MISCELLANEOUS

HENRIETTA, TEX., offers unlimited supply natural gas 4c. to manufacturers; fire brick, tile shales; water; low taxes; healthful; 3 railroads; unusual opportunity legitimate enterprises. Address Booster Club.

INDUSTRIAL PLANTS FOR SALE

COTTON MILL

BUSINESS OPPORTUNITY.—In Kansas City, Mo., a modern, thoroughly equipped cotton mill, 10,000 spindles, cheap power; original investment approximately \$500,000. For sale by receivers for \$275,000 on satisfactory terms. Machinery kept in perfect condition, ready for operation. Investigate. Full particulars. J. Walter Day, 215 Finance Bldg., Kansas City, Mo.

FACTORY BUILDING

TO MANUFACTURERS.—For Sale—A thoroughly modern fireproof factory building, on terms to suit purchaser, or would consider stock proposition in an established meritorious manufacturing enterprise. Building only 6 years old and in perfect condition. Fully equipped with modern woodworking machinery, which will be sold either separately or included in buildings and land. Building is of concrete and steel, sawtooth construction, with fine office rooms on second floor. Floor space 71,000 square feet, divided into 8 rooms with fireproof partitions. Total ground space, nearly 10 acres; plenty of room for expansion. Complete hot-air and dust-collecting systems and electrical equipment for light and power. On Pennsylvania Railroad at Salem, Ohio. For full particulars address S. Grove, Jr., Salem, O.

BASKET AND BOX PLANT

FOR SALE—Plant equipped for manufacturing baskets, crates, boxes and veneers, now in operation; located in live Southern city; plenty of timber; good trade; a bargain; must sell. Address No. 1624, care Manufacturers Record, Balto., Md.

MINERAL AND TIMBER LANDS, WATER POWERS AND MISCELLANEOUS PROPERTIES

TWENTY THOUSAND DOLLARS' WORTH of property for \$5000 if all sold together. It includes 500 acres cut-over land in Colorado county, Texas; 5000 cords oak wood; 1,000,000 feet of merchantable pine timber; 200 cars mining props; located two to four miles of Alletton, in Colorado county, Texas. E. A. Hutchins, owner, 422 Gunter Bldg., San Antonio, Texas.

MANGANESE ORE PROPERTY

MANGANESE ORE PROPERTY FOR SALE.—In the Virginia manganese belt; 147 acres; 1 mile from main line railroad. Henry S. Hutzler & Co., Bankers, Richmond, Va.

FULLERS EARTH AND KAOLIN

FULLER'S EARTH AND KAOLIN.—England and Germany at war; no more from there. We have deposits as good as any ever imported from these two countries. Now is your time. Southern Ins. & Realty Co., Ga. Casualty Bldg., Macon, Ga.

PEBBLE PHOSPHATE

FOR SALE—1200 acres pebble phosphate in Polk county, Florida, on R. R.; guaranteed two million tons; analysis averages 72½ per cent. P. F. L. Average overburden 26 ft. A bargain if taken at once. Address Geo. C. Barton, owner, Lakeland, Florida.

TIMBER FOR SALE

FOR SALE—Nice little pine sawmill proposition of 700,000 feet near Norfolk; 6 miles R. R. If sold soon will make sacrifice. Party with small mill can clean up from \$3000 to \$4000 in 5 to 6 months if handled properly. Parties desiring such a proposition, will pay to investigate promptly. W. A. Joyner, Branchville, Va.

FOR SALE—Hardwood timber on 5000 acres of mountain land immediately on railroad; principally oak, chestnut, hemlock and poplar; pay for as cut and sold. Address North Carolina Tale & Mining Co., Hewlitt, N. C.

FOR SALE—40,000,000 feet of good timber, with sawmill and complete outfit; very low freight rates to Gulf ports; very cheap and on easy terms. James A. Terry, Mobile, Ala.

TIMBER LAND FOR SALE

21,000 ACRES on A. C. L. Ry. and navigable river; cruisers' estimate shows 50,000,000 feet short and long leaf pine, gum, cypress, poplar, etc.; logging easy. Johnson's A. & F. Real Estate Exchange, 926 Pennsylvania Ave. N. W., Washington, D. C.

TIMBER TRACTS located for manufacturers or investors by practical timbermen. Correspondence solicited. Jo A. Parker, Parma, Mo.

LONG-LEAF YELLOW PINE IN FEE SIMPLE.—Twenty-six years ago we selected by forties, for timber only, eliminating all open land, 250,000,000 feet, virgin primitive forests, long-leaf pine, on undulating land, affording minimum logging cost, and which property is now on a railroad giving low rate for both export and interior. Titles are beyond attack by limitation according to law of the State. This timber averages 15,000 feet per acre, and is big, tall, straight pine, free from red heart. We will sell this now at a low price on terms of 25 per cent. cash and balance at 5 per cent. We prefer to deal with buyers only. Address The Pine Land Co., P. O. Box 889, New Orleans, La.

FRUIT, FARM AND TRUCK LANDS

ALABAMA

IRVINGTON, ALABAMA.—"The center of the famous Satsuma orange belt." Located 18 miles southwest of Mobile, on the main line of the L. & N. Railroad between Chicago and New Orleans. Oranges are beginning to ripen, and by Nov. 1 the Irvington orchards will be one mass of gold and green. Plan your Southern trip at that time and investigate for yourself the wonderful possibilities of the Satsuma orange, grapefruit, pecan and other industries. The finest farm and orchard lands for sale. For particulars address Irvington Realty Co., Irvington, Ala.

FOR SALE—2500 acres rich level land near good town on pike in Butler Co., Ala.; 1500 acres in cultivation; balance virgin pine and hardwood timber; watered by several large springs, wells and creeks; improvements consist of 35 tenant-houses, good residence, storehouse, several barns, etc.; complete grocery, sawmill, grists mill, cane mill and evaporator; all kinds of modern farming implements, gears, wagons and harness; 155 hogs, 20 mules, 12 cows, etc.; 800 bus. oats planted, 3000 bales hay, 1800 bus. corn, 2000 gals. syrup; plenty cheap labor. Everything goes at \$25 per acre; reasonable terms. Longman & Kendrick Realty Co., 1501-2 Jeff. Co. Bank Bldg., Birmingham, Ala.

FLORIDA

THE PALATKA FARMS COMPANY of Palatka, Florida, offers to homeseekers the very superior advantages of splendid soil, adapted to potatoes, corn and trucking, or that for oranges and grapefruit, or for combination of both, with location unsurpassed, lying along the beautiful St. Johns River, 2 miles of Palatka, an up-to-date city of 8000 population. It boasts of electric-light and gas plants, four railroads and cheap river transportation. Write for literature. P. J. Becks, Palatka, Fla.

SPECIAL NOTICE.—For sale, at a great sacrifice, 320 acres at Crystal River, Fla., price \$3 per acre. Also, in St. Lucie county, from 321 acres up to 16,000 acres at \$5.50 per acre; 100,000 acres at \$6 per acre. Great bargains in town lots and residential properties. Financial depressions cause of great reduction in price. Now is the time to buy. Address Waters Realty Co., Walton, St. Lucie Co., Florida.

OCEAN BEACH ACREAGE.—470 acres on peninsula, 3¼ miles riparian rights on Biscayne Bay; within 5 years will be conservatively worth \$100,000; can be bought now for a trifle of its real value. Must be sold. Terms and price are right. Miller-Mercer Investment Co., Exclusive Agts., Miami, Fla.

PHILO FARMS, FLORIDA.—We would like to tell you all about our poultry, fruit and vegetable farms in Palm Beach Co., where the best oranges and grapefruit are grown. Full information about the natural advantages will be forwarded you on request. E. W. Philo, 1071 Lake St., Elmira, N. Y.

Classified Opportunities

AN OPPORTUNITY.—Must be sold immediately to settle estate: 18,200 acres; some of the best land in Florida; bounded by the F. E. C. Railway and St. Johns River; will sacrifice for \$4 per acre. Cooper & White, 232 West Forsyth Street, Jacksonville, Florida.

THREE MONTHS FREE.—Subscription to the Indian River Farmer. For truckers, fruit growers, general farmers, and folks who want to know about Florida. Address Indian River Farmer, Dept. "V-1," Bero, Fla.

FREE TOWN LOTS on the beautiful Saint Lucie River, Palm Beach Co., Fla.; immense profit in farming, fruit and truck raising. For particulars and booklet write to Wm. Sundberg, 5126 W. 22d Place, Cicero, Ill.

J. H. BRINSON,
Real Estate and Investment
BROKER,
Ocala, Florida.

MARYLAND
TEN-ACRE beautiful country home, 15 miles out from Washington on Baltimore boulevard; one mile to trolley and steam stations; handsome modern 9-room home with heating and plumbing systems, two cellars, large porches, attic, hardwood trim; good buildings for stock and poultry equipment; entire place well fenced; all kinds of fruit, shaded lawns and elegant water under pressure. Price \$6000; \$3725 cash. Geo. C. Walker, Kenos Building, Washington, D. C.

40-ACRE FARM, half mile from Reisters-town; 8-room house, barn and necessary out-buildings, spring dairy, fruit, fine land. John A. Williams, 527 Law Bldg., Baltimore, Md.

MISSISSIPPI
IS HE CRAZY? The owner of a plantation in Mississippi is giving away a few five-acre tracts. The only condition is that figs be planted. The owner wants enough figs raised to supply a canning factory. You can secure five acres and an interest in the factory by writing Eubank Farms Company, 733 Keystone, Pittsburgh, Pa. They will plant and care for your trees for \$6 per month. Your profit should be \$1000 per year. Some think this man is crazy for giving away such valuable land, but there may be method in his madness.

OHIO

FOR SALE—555 acres Scioto River bottom, 175 acres in corn, good improvements, price \$40,000. 355 in Gallia Co., Ohio, near Gallipolis, 100 acres bottom, 168 acres pasture, 100 acres in woods, 9-room house, large barn. D. W. Rhodes, Cottageville, W. Va.

OKLAHOMA

FOR SALE—Forty acres of best alfalfa land, 35 acres in alfalfa, good stand, 1 mile from good town, ¼ mile from interurban car line, across road from city water-works, 17 miles from capital of State. A bargain at \$125 acre. Write C. T. Alexander, Yukon, Okla.

SOUTH CAROLINA

SPLENDID OPPORTUNITY for investments in large or small acreage improved or unimproved lands in South Carolina for farming or live stock. Write me your requirements. I. D. Bardin, Columbia, S. C.

TENNESSEE

AN UNUSUAL OPPORTUNITY to purchase splendid farm at a price to compare with the present low price of cotton. 261 acres, with 110 in cultivation, partly new ground; good strong, productive land; no rock, glades or gullies. New six-room residence, four-room tenant-house, barns and good fences. This farm is in Lincoln county, conveniently located to schools, churches and railroad. Price for immediate sale, only \$27.50 per acre; terms. For further information address W. C. Thomson, Fayetteville, Tenn.

VIRGINIA

PRODUCTIVE ESTATE FOR SALE, two miles from flourishing city, 80 minutes by rail to Washington, 250 feet above sea level; large handsome new mansion, modern equipment, private telephone wires; 425 highly cultivated acres, game preserves, fishing, etc.; paying investment; genuine beauty of situation. For further particulars, price and terms, address No. 1630, care Manufacturers Record, Balto., Md.

450-ACRE FARM, one mile south of Jarratt, fronting main county road from Jarratt to Emporia. Good lot young timber. A big bargain at \$15 per acre. Address J. H. Bath, Jarratt, Va.

FOR SALE—500 acre Cumberland county, Virginia, farm. Good level, productive land, 100 acres rich bottom land. First-class six-room house, three large barns and other out-buildings, all in good repair. Place well watered. Fruit and timber. Suitable for dairy, stock or general farming. Price \$30 per acre. Home Building & Real Estate Co., 322 Church Street, Lynchburg, Va.

MACHINERY WANTED

WE ARE IN THE MARKET for new or first-class second-hand 24" lathe and shaper, with set of tools; one drill press and set of drills; one emery wheel; one cut-off saw; one power fan for forge; one air motor drill. Tioga Gravel Co., Ltd., Main Office, Suite 1, Hotel Bentley, Alexandria, La.

FINANCIAL

WANTED—\$20,000, three years, 6 per cent.; \$60,000 real estate collateral. "Orchards," Charleston, S. C.

PATENTS AND INVENTIONS

INVENTIONS developed by practical manufacturers. We have designed and manufactured the simplest and most complicated devices. References furnished. Russell Machine Co., Live Oak St., Dallas, Texas.

PATENT FOR SALE

ADDING MACHINE patent for sale. Recent issue. Machine lists and adds. Estimated cost to manufacture, \$15. Business conditions force outright sale, reasonable price. E. Williamson, Selma, Ala.

PATENT ATTORNEYS

PATENTS THAT PROTECT AND PAY. Advice and books free. Highest references. Best results. Promptness assured. Send sketch or model for free search of Patent Office records. Trade-marks registered. Watson E. Coleman Patent Lawyer, 624 F St., Washington, D. C.

EUGENE C. BROWN, ENGINEER AND PATENT LAWYER, Suite 40 Victor Building, Washington, D. C. Member Bar U. S. Supreme Court. Patents and Trademarks. Inventions are considered both from Engineering and Legal standpoints in my prosecution of patents. An experience of over 9 years as Examiner in U. S. Patent Office and over 6 years as Patent Expert in important patent suits are my especial qualifications. Reports upon validity and infringement. Send sketch of invention for advice.

PATENT YOUR IDEAS.—\$9000 offered for certain inventions; book, "How to Obtain a Patent" and "What to Invent," sent free upon request; send rough sketch for free report as to patentability. We advertise your patent for sale at our expense. Chand-lee & Chandlee, patent attorneys, 978 F St., Washington, D. C.

VALUABLE INVENTIONS justify only best legal service. Consult Vernon E. Hodges, Attorney-at-Law, Barrister Bldg., Washington, D. C. Practice before the U. S. Supreme Court; all Circuit Courts; Courts of the District of Columbia, and the U. S. and Foreign Patent Offices exclusively. Continuous practice since 1886. Extensive experience with all classes of invention, representing lawyers, manufacturers and inventors in every State.

PATENT YOUR INVENTION.—Send sketch for free expert search and report as to patentability. Books on inventions and patents, and book of references from congressmen, manufacturers, bankers and inventors, sent free. John S. Duffie & Co., Patent Attys., 620 F St. N. W., Wash., D. C.

PATENTS.—Herbert Jenner, patent atty. and mechanical expert, 606 F St., Washington, D. C. I report free of charge if a patent can be had and its exact cost. Send for circular.

PATENTS THAT PROTECT.—Careful, honest work in every case. Patent your ideas; they may bring you wealth. 64-page book free. Fitzgerald & Co., 317 F street, Washington, D. C. Established 1878. Send for our book.

PATENTS secured or Fee returned. Send sketch for free report as to patentability. Guide book and what to invent, with valuable list of inventions wanted, sent free; \$1,000,000 offered for inventions. Patents secured by us advertised free in World's Progress; sample free. Victor J. Evans & Co., 12 Ninth St., Washington, D. C.

Road Officials Engineers and Contractors

Be Sure to Attend

American Road Congress

Atlanta, Ga.

Nov. 9-14

Instructive papers and important discussions will be held on every phase of road and street work.

Complete lines of road materials, machinery and equipment will be displayed in the big exhibit halls.

MANUFACTURERS RECORD

Invites you to make your headquarters at its Booths in the main Exhibit Hall.

PROPOSALS

BOND ISSUES

BUILDINGS

PAVING

GOOD ROADS

GOVERNMENT PROPOSALS

PROPOSALS FOR THE PURCHASE OF
Scrap Rail offered for sale by The Panama Canal and which is no longer needed. Sealed proposals will be received at the office of the General Purchasing Officer, The Panama Canal, Washington, D. C., until 10.30 A. M. November 16, 1914, at which time they will be opened in public, for purchasing the above-mentioned articles. Blanks and general information relating to this Circular (No. 876) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City; 614 Whitney-Central Building, New Orleans, La., and 1086 North Point Street, San Francisco, Cal.; also from the U. S. Engineer Offices in the following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala., and Galveston, Tex.; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

PROPOSALS FOR FUEL OIL FOR THE
year ending December 31, 1915. Sealed proposals will be received at the office of the General Purchasing Officer, The Panama Canal, Washington, D. C., until 10.30 A. M. November 23, 1914, at which time they will be opened in public, for furnishing the above-mentioned articles. Blanks and general information relating to this Circular (No. 875) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City; 614 Whitney-Central Building, New Orleans, La., and 1086 North Point Street, San Francisco, Cal.; also from the U. S. Engineer Offices in the following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala., and Galveston, Tex.; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

DEPARTMENT OF THE INTERIOR.
Washington, October 15, 1914. Sealed proposals in duplicate will be received at this Department until 2 P. M. Saturday, November 21, 1914, and then opened, for the furnishing of all labor and material (unless otherwise specified) which shall be required in rewiring the first floor and basement of the Patent Office Building, Washington, D. C., in accordance with specifications for the work, copies of which may be obtained on application to the chief clerk of this Department. The right is reserved to reject any and all bids, or to accept or reject any part thereof in the discretion of the Department. Proposals should be securely enveloped, marked "Proposal for rewiring Patent Office Building," and be addressed to the Secretary of the Interior. BO SWEENEY, Assistant Secretary.

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C.,
October 27, 1914. Sealed proposals will be opened in this office at 3 P. M. December 17, 1914, for the construction, complete (including mechanical equipment, lighting fixtures, and approaches), of a two-story-and-basement stone, terra-cotta and brick-faced building of 6800 square feet ground area, fireproof construction, composition roof, for the United States postoffice at Glens Falls, N. Y. Drawings and specifications may be obtained from the custodian at Glens Falls, N. Y., or at this office, in the discretion of the Supervising Architect. Drawings and specifications will be ready for delivery after November 7, 1914. O. WENDEROTH, Supervising Architect.

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C.,
October 15, 1914. Sealed proposals will be opened in this office at 3 P. M. November 24, 1914, for the construction, complete (including mechanical equipment, interior lighting fixtures, and approaches), of the United States postoffice at El Reno, Okla. The building is two stories and basement, with a ground area of 5270 square feet; fireproof construction. Drawings and specifications may be obtained from the custodian of site at El Reno, Okla., or at this office, in the discretion of the Supervising Architect. O. WENDEROTH, Supervising Architect.

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C.,
October 15, 1914.—Sealed proposals will be opened in this office at 3 P. M. December 5, 1914, for the construction, complete (including mechanical equipment, interior lighting fixtures, and approaches), of the United States postoffice at Morristown, N. J. Two-story-and-basement building; fireproof throughout; brick and marble facing; tile roof; ground area, 6825 square feet. Drawings and specifications may be obtained after October 31, 1914, from the custodian of site at Morristown, N. J., or at this office, in the discretion of the Supervising Architect. O. WENDEROTH, Supervising Architect.

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C.,
October 26, 1914. Sealed proposals will be received at this office until 3 P. M. November 16, 1914, and then opened, for new clock, etc., for present tower of the U. S. postoffice and courthouse, Danville, Va., in accordance with the drawing and specification, copies of which may be obtained at this office. O. WENDEROTH, Supervising Architect.

PROPOSAL ADVERTISING INFORMATION

RATE: 20 cents per line per insertion.

PUBLICATION DAY: Thursday.

FORMS CLOSE 9 A. M. Wednesday. Copy received later cannot be published until issue of following week.

NIGHT LETTER: When too late to send copy by mail to reach us by 9 A. M. Wednesday, forward by night letter.

THE DAILY BULLETIN OF THE MANUFACTURERS RECORD:

Published every business day; gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened, or when daily publications are necessary to meet legal requirements.

The same rate applies—20 cents per line per insertion.

BOND OFFERINGS

Sale of Road and Bridge Bonds

Notice is hereby given that the Board of County Commissioners of the County of DeSoto, Florida, will receive sealed bids at the office of the Clerk of the Circuit Court, Arcadia, Florida, until 2 o'clock P. M. on the 4th day of November, A. D. 1914, for the purchase of bonds of Special Road and Bridge District No. 5, authorized and issued by the said Board of County Commissioners for the said Special Road and Bridge District No. 5, in the sum of three hundred and fifty thousand dollars.

The entire bond issue of three hundred and fifty thousand dollars, coupon form, is hereby offered for sale; the same are issued in denominations of five hundred dollars each, bearing date of the first day of October, A. D. 1914, maturing thirty years after date, bearing coupon form interest at the rate of six per cent. per annum, interest payable semi-annually, and interest and principal payable at Arcadia, DeSoto county, Florida.

The said Board of County Commissioners reserves the right to sell the whole or any part of the said bond issue, and also to reject any and all bids.

Each bidder is required to furnish certified check for 2 per cent. of his bid as evidence of good faith. The said checks of unsuccessful bidders will be returned and the checks of the successful bidder will be forfeited in case he fails to comply with his bid. Each bidder will state the time when he will comply with his bid by paying money or other evidences thereof.

(Seal.) A. L. DURANCE,
Clerk of Circuit Court.

Bridge Bonds For Sale

On the 21st day of November, 1914, at the office of the County Clerk at Rogersville, Tennessee, we will receive sealed bids for 18 Hawkins County, Tennessee, bridge bonds of the value of \$1000 each, to become due from one to eighteen years, respectively, and to bear 5 per cent. interest, payable annually; said bonds not to be sold for less than par value. Information as to size, resources and wealth of county, etc., forwarded on application.

This October 19, 1914.

ALBERT LYONS,
ROD MILLER,
A. L. BUREM,
Committee.

Sale of School Bonds

Sealed bids will be received by the Board of Trustees of the Donalsonville School District, Donalsonville, Ga., up to 12 o'clock noon November 18, 1914, for the sale of an authorized issue fifteen Donalsonville school bonds of the denomination of \$1000 each, dated January 1, 1915, and maturing one each annually on and after January 1, 1920, bearing interest from date at the rate of 6 per cent. per annum, payable semi-annually. Population of Donalsonville School District, about 25,000; value of taxable property, \$1,074,738; rate of taxation, five mills. No outstanding bonds. Bids must be accompanied by a certified check for 10 per cent. of the issue. The right to reject any and all bids is reserved.

For further information address

J. F. BROWN,
Secretary and Treasurer,
Donalsonville, Ga.

Sale of Drainage Bonds

Notice is hereby given that Drainage District No. 3 of Madison County, Tennessee, will offer for sale its drainage bonds in the sum of \$75,000 on Thursday, November 12, 1914, at 11 o'clock A. M., at the office of the County Judge, in Jackson, Tennessee, to the highest bidder for cash. Sealed bids will be received until the day and hour above mentioned for said bonds, when and where same will be opened. These bonds are issued under the orders of the County Court and are secured by first lien on about 9000 acres of bottom land located in said county. They bear interest at 6 per cent. from December 1, 1914, payable annually, and run for a period of twenty years, and mature serially after five years. They are in denominations of \$500 each. The right is reserved to reject any and all bids.

For further information address A. W. Stovall, County Judge, Jackson, Tennessee.

Road Bonds

Notice is hereby given that sealed bids will be received for the \$325,000 bond issue of the bonds of the Crittenden County Road Improvement District up to noon of November 3, 1914, and certified check for not less than 2 per cent. of the amount of the bid must accompany each bid, and the Board of Commissioners of the above-named road improvement district reserves the right to reject any and all bids.

Address all bids to
F. K. LASHBROOK, Secretary,
Crittenden County Road
Improvement District,
Marion, Ark.

\$500,000 Hillsborough County, (Florida) Road Bonds

The Board of Commissioners of Hillsborough County will receive bids for the purchase of the above bonds, or any part thereof, at the office of the undersigned, in Tampa, on or before noon November 7, 1914. Bonds dated October 1, 1913, due October 1, 1943, without option of prior payment. Denomination \$1000. Principal and semi-annual interest at five per cent. per annum (April 1 and October 1), payable in gold coin in New York City; matured coupons detached. Bonds have been engraved and will be certified as to genuineness by the Columbia Trust Company of New York, and the approving opinion of Caldwell, Maslich & Reed of New York will be furnished to the successful bidder or bidders without charge. Each bid must be accompanied by a certified check upon an incorporated bank for two per cent. of the par value of bonds bid for. Delivery will be made in Tampa or New York on November 20, 1914. Payment to be made in current money. Further information will be furnished upon application to the undersigned or said trust company. The right to reject any and all bids is reserved. No bid for less than ninety-five and accrued interest will be received.

W. P. CULBREATH,
Clerk Board of County Commissioners.

PAVING AND GOOD ROADS

Asphalt Paving

NOTICE TO CONTRACTORS.

City of Sarasota will receive bids on 12,000 yards of asphalt paving up to 7 P. M. November 10. Plans and specifications on file with Commissioner of Public Works.

FITCH P. WRIGHT,
Commissioner of Public Works,
Sarasota, Fla.

Road Construction

Sealed bids will be received by the Board of Commissioners of the Crittenden County Road Improvement District until noon November 3, 1914, for the construction of a 16-ft. reinforced concrete wagonway, approximately 2½ miles in length. Plans and specifications may be had upon application when accompanied by a deposit of \$10, same to be returned upon the surrender of the plans and specifications in good condition. Right is reserved to reject any and all bids.

Address all bids to

H. W. HESTERLY, Engineer,
Marion, Ark.

MISCELLANEOUS

Schoolhouse

Sealed bids will be received by the Board of Trustees of the Donalsonville School District and the contract let for the construction of a schoolhouse at 12 o'clock noon on November 18. A copy of plans and specifications will be furnished on request, or may be seen at the office of P. E. Dennis, Architect, Macon, Ga. All bids must be accompanied by a certified check for 10 per cent. of the contract price. The right to reject any and all bids is reserved.

J. F. BROWN,
Secretary and Treasurer,
Donalsonville, Ga.

Proposal for Constructing Water-Works at Columbus, Georgia

Sealed proposals will be received by the Board of Water Commissioners of the City of Columbus, Ga., until 3 o'clock P. M. November 17, 1914, for constructing a Water-works System in the City of Columbus, Ga., and furnishing the materials for same.

Works will embrace approximately 15 miles of cast-iron pipe from 4 to 24 inches in diameter, centrifugal pumps, filtration plant, tower and tank, power station, hydrants, gate valves, and other appurtenances.

Plans and specifications will be on file and may be seen at the office of the Board in Columbus, Ga., and at the office of the Engineer in Winston-Salem, N. C., and copies of specifications, forms of proposals, etc., may be obtained from the Engineer after October 25, 1914.

The right is reserved to reject any or all bids.

JNO. C. COOK, Chairman;
E. P. DISMICKES,
EDW. W. SWIFT,
E. J. RANKIN,
R. P. SPENCER,
Board of Water Commissioners.

Engineer:
J. L. LUDLOW,
Winston-Salem, N. C.

Garbage and Refuse Disposal Plant

Miami, Fla.

Sealed proposals for constructing, complete, a Garbage and Refuse Disposal Plant for the City of Miami, Florida, will be received by the Mayor and City Council at the office of the City Clerk until 7.30 P. M. November 18, 1914.

Plans and specifications may be seen at the office of the City Clerk, Miami, Fla., or at the office of John R. Baylis, Engineer, 704 Farley Building, Birmingham, Ala., or may be secured from B. H. Klyce, 52 Real Estate Building, Miami, Fla., on receipt of a deposit of \$5, which amount is refunded on the return of plans in good condition.

Bidders may submit alternate designs, which must conform to the Engineer's specifications. The furnace shall have a guaranteed capacity of two tons per hour.

Each bid is to be accompanied by a certified check for five per cent. of the amount of the proposal, and the successful bidder will be required to furnish a bond in amount equal to one-third of the contract price.

W. B. MOORE,
City Clerk.

Proposals for Painting Bridge

STATE OF MARYLAND,
STATE ROADS COMMISSION.
NOTICE TO CONTRACTORS.

Sealed proposals for painting the Conowingo Bridge over the Susquehanna River between Cecil and Harford counties—this bridge is an all-steel structure, approximately 1500 feet in length—all paint necessary for the work will be furnished by the State Roads Commission at the bridge site—will be received by the State Roads Commission at its offices, 601 Garrett Building, Baltimore, Maryland, until 12 M. on the 24 day of November, 1914, at which time and place they will be publicly opened and read.

Bids must be made upon the blank form contained in the book of specifications. Specifications will be furnished by the Commission upon application.

The Commission reserves the right to reject any and all bids.

By order of the State Roads Commission this 27th day of October, 1914.

O. E. WELLER,
Chairman.
WM. L. MARCY,
Secretary.

Arch

OFFICE OF CITY ENGINEER,
Richmond, Va., October 24, 1914.

Sealed proposals will be received at this office until 12 o'clock noon November 6, 1914, for the construction of an arch under Broad street and retaining walls of approaches to same to be built of reinforced concrete.

Plans, specifications, forms of proposals and information can be obtained at this office upon application.

All parties to whom specifications and plans are furnished will be required to make a deposit of \$10, which will be refunded to them upon the return of the plans and specifications to this office in good condition.

A certified check in the sum of \$1000, made payable to the City Treasurer, will be required to accompany each proposal as a guaranty of execution of contract.

All parties are required to examine the location and determine the difficulties of construction for themselves.

The Administrative Board reserves the right to reject any and all proposals.

CHAS. E. BOLLING,
City Engineer.

Carts, Cans and Sweepers

San Antonio, Texas.

The City of San Antonio will receive up to 4 o'clock P. M. of Monday, Nov. 9, 1914, sealed bids on carts for carrying demountable cans, on cans and on modern street sweepers. The city reserves the right to reject any or all bids.

Apply for information and address bids to RAY M. MACKET, City Purchasing Agent, San Antonio, Texas.

[Continued from Page 63.]

kettles and drying and mixing apparatus, and has a capacity for turning out 1000 yards of two-inch topping, or the equivalent of asphaltic concrete, Topeka specifications or binder per day. The whole plant can be set up ready for operation, or knocked down for shipment on a flat car within a few hours, or it can be moved along the road and kept up with work. The maker claims the portability of the plant makes it popular with contractors having small or medium size contracts.

Big Railway Coal-Handling Equipment Contracts.

Notwithstanding the general unsettled business conditions, and especially in regard to railroads, announcement is made that contracts have been secured by the Roberts and Schaefer Co., McCormick Bldg., Chicago, engineers and contractors, for the Louisville & Nashville Railway Co. for the equipment for a 1000-ton reinforced concrete, Holmen type, locomotive coaling plant, with weighing facilities, for installation at the new Radnor terminal, Nashville, Tenn., for the building of a 200-ton capacity, Holmen type, coaling plant, with weighing facilities, at Henderson, Ky., for the Louisville, Henderson & St. Louis Railway Co., and for a large loading plant to be built at Harahan Incline, New Orleans, La., for the Illinois Central Railroad Co.

Automatic Safety Exit Doors.

Announcement is made that plans are being developed regarding the manufacture of the Woodard approved automatic safety exit door which is designed and patented by C. B. Woodard of Springfield, Tenn. The Woodard door is said to provide a practical safety exit, which is especially adapted for use in theaters, schools, halls, factories, department stores and in buildings generally where a number of people congregate and in which there would be a rush for safety exits in the event of fire or panic. In the invention the main feature is the locking device for the doors which is released upon pressure being applied at any point on the inner surface of the door, but at the same time the locking mechanism can only be released from the outside by a key. The actuating mechanism of the locking device is in the nature of a solid surface covering the inner surface of the door proper. Single and double doors operate on the same general principle, single doors locking at the free side and double doors locking at top and bottom. It is said the doors can be easily and quickly installed at comparatively small cost, and that the Woodard invention can also be attached to doors already in buildings. The doors can be made of wood or metal and finished to suit any interior.

Brickmaking Plant for Sale.

Regardless of weather conditions, 250 lots of unencumbered property, including machinery, realty, etc., of the Thomaston Brick Co. at Thomaston, Maine, will be sold on the premises Thursday, November 12, 1914, to the highest bidder by J. E. Conant & Co., auctioneers, of Lowell, Mass. Analyses and tests of the clays prove that the clays carry over 17 per cent. of alumina, are very high in silica, and produce brick of great crushing strength and low absorption. The fineness and freedom of the clays from salt-peter and lime are a guarantee against discolorations or changes in appearance of their products. The machinery and other personal property is claimed to be practically new and of the latest standard type. All the property to be sold is set forth in detail in an illustrated descriptive catalogue, which may be had upon application to the office of the auctioneers.

Refrigerating Machinery Sales in the South.

Among ice-making and refrigerating machinery sales recently made by the York Manufacturing Co. of York, Pa., the following equipment is to be installed in the South: One 35-ton vertical refrigerating machine, direct connected to a Corliss engine, and condensing side complete, including one double pipe flooded ammonia condenser, a 20-ton flooded freezing and distilling system and two 100-horse-power horizontal return tubular boilers and equipment for the Morehead City (N. C.) Sea Food Co.; one 40-ton horizontal double-acting refrigerating machine, direct connected to a Corliss engine, and condensing side, including two double pipe flooded ammonia condensers and a refrigerating system consisting of double pipe brine coolers, brine supply tank, brine circulating pumps and 1500 feet of brine piping for the Moultrie (Ga.) Packing Co.; one 4-ton vertical belt-driven re-

frigerating machine and high-pressure side, each for C. G. Neylans, Tampa, Fla., and Texas Power & Light Co., Sweetwater, Tex.; one 6-ton vertical belt-driven refrigerating machine and high-pressure side, complete, for the United States Department of Agriculture at Beltsville, Md.; one 2-ton vertical belt-driven refrigerating machine and high-pressure side installed by H. L. Stevens of El Paso, Tex., for the Hendrick Sanitarium, El Paso, Tex.; one 20-ton vertical refrigerating machine, direct connected to Corliss engine, and condensing side installed by Charles F. Rantz of New Orleans, La., for the Miller-Elmer Candy Co. of New Orleans, and one vertical accumulator and three double pipe dehydrator coils, respectively, for the Polar Wave Ice & Fuel Co. of St. Louis, Mo., and St. Augustine (Fla.) Ice Co.

TRADE LITERATURE.

"Nonpareil" Insulating Brick.

A new publication entitled "Saving Fuel," which deals with the use of "Nonpareil" insulating brick in boiler setting, has recently been issued by the Armstrong Cork & Insulating Co. of Pittsburgh, Pa. Information is given in the pamphlet on boiler-room heat losses, insulating efficiency, structural strength, conservation of waste heat, together with illustrations and diagrams of insulating boiler setting with "Nonpareil" brick.

The Reilly Improved Creosote Oil.

Extracts from a paper on specifications for creosote oil read before the convention of the American Wood Preservers' Association by Mr. P. C. Reilly, president of the Republic Creosoting Company of Indianapolis, Ind., have been published in pamphlet form and are issued by the company. In addition to the specifications and method for obtaining Reilly improved creosote oil, which is a distilled product of coal tar, the pamphlet contains information on creosote oil and its application as a wood-preserving and waterproofing material. Description and illustrations are also given for the proper method of penetration of the preservative.

A New Dahlstrom Product.

A gravity multiple latch or hooking device for automatically locking swinging fire-doors has been perfected by the Dahlstrom Metallic Door Co. of Jamestown, N. Y., manufacturer of hollow metal doors, windows and cold-drawn metal mouldings and shapes. A pamphlet, recently issued by the company, gives a detailed description with illustrations and diagrams of the latch and its proper application to fire-doors. In addition to this pamphlet, six plates showing a number of new and interesting features of hollow metal construction have also been issued for the portfolio which was distributed by the company during the past year to agents and builders.

Fuller Quality Products.

Taking effect November 2, 1914, the Lehigh Car, Wheel & Axle Works of Catasauqua, Pa., announces that all orders for sprocket and traction wheels will be billed in accordance with the revised prices published in its new catalogue No. 50. In presenting this catalogue and price list covering face-hardened sprocket and traction wheels and general line of chilled charcoal iron castings, the company says it has made chilled iron castings of every description since 1867, and its products represent the highest point of development. The company further adds that it is a specialist in this line of service, and full information and prices will be given for particular requirements.

Union Brick Machine.

Model KA Union brick machine, with the Freese Improved system of direct-gearing, is illustrated and described in folder 305, recently issued by E. M. Freese & Co. of Gallon, O., manufacturer of brick, tile and fireproofing machinery. The model KA Union brick machine is said to be exceptionally large, strong and powerful, economical in operation and inexpensive to install. Five sizes of this type of machine are built with capacity range of 10,000 to 150,000 bricks daily. Freese & Co. furnishes equipment in a variety of patterns and sizes for any capacity for the manufacture of building or fire brick, Dunn wire-cut-log or repressed paving block, fireproofing, drain tile, building block, electrical conduits or radial chimney block.

Small Concrete Building Specifications.

"How to Erect Small Concrete Buildings" is the title of a circular issued by the Association of American Portland Cement Manufacturers, Bellevue Court Bldg., Phila-

delphia, Pa., which describes in a simple and concise way how to construct concrete buildings in order that farmers and others may substitute this economical and durable type of structure for those requiring frequent renewals or repairs. Methods of mixing and placing the concrete, with illustrations and description of constructing foundations, walls, windows, doors and roofs for small concrete buildings, such as poultry-houses, smokehouses, wagon-houses, garages and other storage-houses, are contained in the circular.

Refractory Material Catalogue.

A serviceable leather-bound catalogue containing useful information and tables appertaining to the use of fire brick, silica, magnesite, chrome, fire clay brick and other refractory materials has recently been issued by the Stowe-Fuller Company, Rockefeller Bldg., Cleveland, O. In the catalogue are shown illustrations of the different operations in the manufacture of fire brick, together with views of the company's plants located in Ohio, Pennsylvania and Kentucky. Many of the different sizes and shapes of bricks manufactured by the company are also illustrated and described. The Stowe-Fuller Company states its manufactures brands suitable for every purpose wherever fire brick is required, and that it stands ready to give the benefit of knowledge gained by over thirty years' experience in the manufacture of high-grade brick.

Vitrified Brick Pavements and Highways.

To bring to the attention of the public the merits of vitrified brick as a paving material and to influence the proper construction of brick streets, the National Paving Brick Manufacturers' Association, Engineers' Bldg., Cleveland, O., has issued from time to time a number of editions of specifications and directions for laying vitrified-brick street pavements and highways. In serving this purpose the association has issued a revised edition of "Specifications for the Construction of Vitrified Brick Street Pavements and Vitrified Brick Highways," containing information on grading, drainage, stone curbing, concrete and other foundations, rolling, filling, etc., with cross-section diagrams of important features of street and road construction work, together with illustrations of actual construction work and completed contracts.

Small Electric Motors.

In its "Service" catalogue, which is dedicated to the manufacturer of high quality power-driven machines, the Robbins & Myers Co. of Springfield, O., especially emphasizes the adaptability of the electric motor in the smaller sizes for use on hand-operated machines, and gives many illustrations of their application. A brief description of the company's organization and manner in which the officials study the requirements of customers is included in the catalogue, together with illustrations showing office and factory views.

"Buckeye" Conduit and "Realflex" Conductors.

"Buckeye" rigid conduit, enameled and galvanized and "Realflex" armored conductors for electrical transmission purposes are illustrated and described in pamphlets issued by the Western Conduit Co. of Youngstown, O., a subsidiary of the Youngstown Sheet & Tube Co. By its process of threading the pipe after pickling in an acid bath to remove scale, rust and other foreign substances, the company claims that sharply cut, clean threads are obtained on "Buckeye" rigid conduit. The "Realflex" armored conductors are said to be of the highest grade of galvanized steel wire manufactured by the company direct from the ore, combining real flexibility and adequate strength. Lead covered "Realflex" is especially adapted as a moisture-proof conductor where flexibility is desired, as in packing plants, cold-storage buildings, damp basements and in mines of all description.

Report of Steel-Fence Paint Tests.

In the supplement to the October issue of "Graphite," published by the Joseph Dixon Crucible Co. of Jersey City, N. J., is given a table of results of tests on paint protection for steel construction which were made during the steel-fence paint tests at the annual meeting of the American Society for Testing Materials, held in Atlantic City, N. J., with comparisons as to whether this test parallels those of the water test which preceded and suggested it. The subject of pigments and their corrosion resisting qualities is broadly discussed in the supplement. The Joseph Dixon Crucible Co., makers of Dixon's silica-graphite paint, will send free upon

request any of the following booklets, folders, etc.: "Philosophy of Protective Paint," "Modern Protective Painting," "Colors and Specifications," "Paint for Roofs," "Painting the Smokestack," "Paint for Steel Cars," "Gas Holder Painting," "Standpipe Painting" and "Notable Building."

Perforated Metals.

By reason of a constantly broadening field in the use and application of perforated metals, the Cross Engineering Co. of Carbondale, Pa., manufacturer of perforated metals, coal-preparing machinery and "Simplex" rivetless chain, calls especial attention in its 1915 catalogue to its facilities for the manufacture of perforated sheets and plates. The illustrations and description of the perforated plate shown in the catalogue convey a general idea of the product and the trade requirements. Perforated plate in steel, galvanized iron, bronze, brass and other metals in any thickness and made into any form is furnished by the company. Elevator buckets, coal screens, crusher rolls, mine cages, link-belt chain and "Simplex" rivetless chain are among other products manufactured by the company and illustrated and described in the catalogue. Tables of the United States standard gauge for sheet and plate steel, Birmingham (Stubs') wire gauge, American (Browne & Sharpe's) gauge for iron, steel, copper, brass and manganese bronze, sheet zinc table and table for punching sheet plate are also included in the catalogue.

Individual Steam Equipment Displaced by the Introduction of Central Station Power.

A preliminary descriptive price-list of part of the released machinery and steam equipment of nineteen coal mines in the Dunn Loop Creek and Cranberry districts of West Virginia has been issued by the equipment sales department of the New River Company of Macdonald, W. Va. The sale of this equipment, including boilers, steam-driven generator sets, compressors, fans, mine locomotives, hoists, pumps, etc., is brought about by the fact that it has been displaced by the introduction of central station power furnished by the Virginian Power Co. of Bluefield, W. Va., from its Kanawha River development near Cabin Creek, the New River Company having contracted for the purchase of this electric power to save part of the expense of running so many individual boiler plants. To use this electric power involves the substitution of alternating current for the direct current now generated by steam-driven generators at the several mines. It also involves the substitution of electric hoists, compressors, etc., for the corresponding steam equipment. As rapidly as each of the mines is electrified the steam equipment will be offered for sale. It is said that when the New River Company acquired these mines, in 1906, a system of progressive development was instituted, and the company followed out a policy of purchasing new equipment and scrapping the old. It is for this reason, it is claimed, that much of the equipment now offered for sale is new, and it is all in excellent condition, with the exception of some of the boilers and pumps, which will be overhauled and put in first-class second-hand condition before shipment. A partial list of the equipment which will be for sale and ready for delivery November, 1914, is given in the bulletin. It is expected the balance of the equipment will be available by January, 1915.

A \$300,000 Drainage Enterprise.

About 22,000 acres of swamp and overflow land on the Mississippi River, in Lewis and Marion counties, will be reclaimed at an estimated cost of \$300,000. Bonds will be issued for this reclamation, and the Fabius Drainage District is the organization which will undertake the proposition. John H. Nolen, Jefferson City, Mo., is State Land Reclamation Commissioner.

Promoting Southern Welfare.

S. M. Oden, local manager Gilsland Oil Mills & Fertilizer Co., Gibsland, La., writes to the MANUFACTURERS RECORD:

"Under no consideration would our office be without the MANUFACTURERS RECORD each and every week, as your publication promotes the welfare of our section more than any other paper that has come before the writer."

Special Advertisements of General Interest.

By J. E. CONANT & CO.

Auctioneers

OFFICE, LOWELL, MASSACHUSETTS

REGARDLESS OF WEATHER CONDITIONS THE HIGHEST BONA FIDE BIDDERS SHALL BE THE ABSOLUTE PURCHASERS OF THE TWO HUNDRED AND FIFTY LOTS OF PROPERTY

MACHINERY—OTHER PERSONALTY—AND REALTY

FREE FROM ENCUMBRANCE

Upon Railroad and Tidewater and in Lots to Suit Purchasers.

At Thomaston, Maine, on Thursday, the 12th day of November, 1914, commencing promptly at half-past eleven o'clock in the forenoon, upon the premises of the Thomaston Brick Company. Analyses and tests of the clays prove that the clays carry over 17% of alumina, are very high in silica, that brick made from them show from 30% to 60% greater crushing strength and from at least 30% to 60% less absorption; their fineness and freedom from saltpetre and lime are a guarantee against discolorations or changes in appearance of their products; they are also remarkably free from foreign matter in any way injurious to the manufacture of brick and pottery; there is not the remotest difficulty in drying and burning at a low temperature. Dry pressed brick has not averaged 7%; it is equally good for fireproof hollow brick, tapestry and other fancy brick. The machinery and other personal property is practically new and of the very latest standard type. All the property to be sold is set forth in detail in an illustrated and descriptive catalogue, which may be had upon application at the office of the auctioneers, where all inquiries must be made. Freight rates average \$7 per thousand less from Thomaston than from other sources of repressed face brick; all native bred labor; 1700 ft. of spur track; tide-water frontage; naturally drained clay lands; a box of clay sent express paid upon proper request. John W. Burns, Assignee.

THE CONTROLLING INTEREST

IN AN

OLD ESTABLISHED BUSINESS FOR SALE

THE COMMON STOCK EARNED 50% IN 1913

Orders now on the books indicate a better business for 1914.

Owing to ill-health and reluctantly acting upon the urgent advice of his physician, a client has instructed me to offer for immediate sale the controlling interest in a

\$400,000.00

TEXTILE and GARMENT MFG. CORPORATION

This is the largest, most important and best-known concern in this line in the United States. Organized in 1900 with a capital of only \$5000, it has grown to its present proportions of \$400,000 entirely out of earnings, besides paying very large cash dividends to its stockholders.

It has the most perfectly efficient organization in this country. The factory manager, sales manager, and heads of departments are all stockholders who have grown up in the business. They have made the past great success possible and are well equipped to make the future even better, so that the purchasers of this stock can step into a well-managed and very profitable business. This is a rare and unusual opportunity for a man to start his son in a very interesting, clean and profitable industry.

This business has just been appraised and the books audited by one of the best-known public appraisals and auditing companies. This report is open to inspection. The company has always enjoyed the highest commercial rating, and the highest bank and commercial references will be supplied upon request.

Full details upon request. Correspondence solicited and inspection of the plant invited.

T. S. SPRAGUE, Investment Securities,
1802 Ford Building, Detroit, Michigan.

Your chance to open up a new market for your goods in

SOUTH AMERICA

If interested, write at once to

FRIEDR. W. LUTZ

RICHMOND, VA.

Personal Representatives in Brazil and the Argentine Republic.

Safe Investment

LARGE RETURNS

The Albemarle Pippin—the favorite apple of the late Queen Victoria and of the present royal family of England—is the finest flavored and the best seller of all apples. It grows to perfection only in a few sections of Piedmont Virginia, in very small areas—pockets of mountain soil. It can never be overproduced, and it brings a fancy price whether the crop of apples in the United States is large or small. Besides exporting we sell each season to regular customers in about 30 States. 323 acres for sale with bearing orchard, which has not failed in eight years. Would prefer to sell one-half interest, and will give satisfactory guarantee to purchaser of not less than 10 per cent. net from the start. Money needed to develop large young orchards not in bearing. Write

ALBEMARLE PIPPIN CO.

R. F. D. No. 4.

Charlottesville, Va.

WANTED

A Cotton Factory

Arkadelphia offers a bonus of 100 bales of cotton, a free site, electrical power for 6 months; has good clean city government, splendid graded schools, two colleges, a healthy climate, natural gas, cheap electrical power, and located in the heart of the cotton-producing section. Address the Mayor of Arkadelphia, Arkansas.

Natural Gas Four Cents

for Industries at

HENRIETTA, TEXAS

Domestic Gas 20 cents. Three Railroads, Water, Low Taxes, Healthful. Write HENRIETTA BOOSTER CLUB

Colombia, South America

American college graduate Engineer, acquainted with export Latin trade, speaking Spanish and German, desires agency. Building materials and machinery in general. References furnished. Reports, investigations, investments a specialty. Address Colombia, care Manufacturers Record, Balto., Md.

Cotton Mill Stock

FOR SALE

910 Shares Stock in a live, prospering cotton mill. If interested, address

BOX 1, WINDER, GA.

FOR SALE

Manufacturing Plant

Northern Ohio

One-story brick machine shop, 76x176, on five acres of land, fully equipped for heavy work, complete power plant and one ten-ton electric traveling crane, on two railroads, in growing city of fifteen thousand. Good chance for expanding. For further particulars address

UNION TOOL COMPANY

West Chicago, Ill.

Bargains in Machinery and Supplies.

MACHINERY BARGAINS

A few selections from our big stock of snaps. Write for Free Complete List

No. XB-213.

1000 tons "T" Rails, 12 to 16 lbs.

No. XB-31. Worm Gear Freight Elevator,

2000 lbs. cap.

No. XB-32. Hoisting Engine, Dbl. Cyl. Drum,

reversible link motion, 10 in. x

14 in.

No. XB-33. 200 Storage Tanks, capacities

from 25 to 2000 gals.

No. XB-34. Sprague Electric 3-phase 20 H.

P. Motor.

No. XB-35. 200 pieces 15-in. 42-lb. "I" Beams.

No. XB-36. Austin Jaw Crusher, 14-in. x 10-

in. Opening.

HARRIS BROTHERS COMPANY, Owners

Chicago House Wrecking Company

35th and Iron Streets CHICAGO, ILL.

Special Bargains in Sanders

1 42" 3-drum Perfection Sander, thor-

oughly overhauled.....\$350.00

1 48" 3-drum Thomas Sander.....\$400.00

1 48" 3-drum H. B. Smith Sander.....\$500.00

1 48" 3-drum Royal Invincible Sander,

used only 3 weeks.....\$500.00

1 54" 3-drum J. A. Fay & Co., fine order.....\$500.00

1 60" 3-drum Columbia Sander in A-1

condition.....\$600.00

JOINTERS

1 20" Carrey Hand Joints.....\$100.00

1 30" Buss Extra Heavy Hand Joints.....\$125.00

Woodworking machinery of all kinds.

Write, stating your requirements.

CLEVELAND BELTING & MACH'RY CO.

1922 Scranton Road Cleveland, O.

A. C. TURBINE SET

300 K. W., 3-phase, 60-cycle, 440-volt (can be rewound for any voltage for \$375) Westinghouse Alternator to a Parsons turbine, complete with jet condenser, vacuum pumps and all fittings.

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AT A BARGAIN

3 Lidgerwood Hoisting Engines, cylinders 8 1/4 x 10, D. D., D. C., first-class condition.

1 Wetherall Twin Corliss Engine cylinders 20 x 42, first-class condition.

2 5" Worthington Turbine Pumps, D. C. to 85 H. P. motors.

Plants Bought and Dismantled

BOSTON IRON & METAL CO.

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We Have a Large Stock of

Exceptionally Good

Used Machinery

LATHES

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Send for Complete List

PRENTISS TOOL & SUPPLY CO.

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Boilers For Sale Cheap

Two used Cast Iron Sectional Steam

Boilers, capacity 5150 square feet each.

First-class condition.

MCKICKLE & McMAHON

Richmond, Va.

Generator for Sale

300 K. W. Westinghouse Generator, \$1000; f. o. b. cars Eastern part of Pennsylvania; 6 pole, 400 R. P. M., 550 volts, 3 bearing machine in A1 condition. Full commutator, ready for immediate delivery. Harry E. Salzberg & Co., 30 Church St., New York City.

Machinery

Second-Hand and Rebuilt

Inquiries Solicited

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Electrical Apparatus

Bought, Sold, Exchanged, Rented and Repaired

Large stock of motors and small generators. Write for our A. C. motor price list. Get our repair and rental prices. Send us a list of the equipment you have for sale.

V. M. NUSSBAUM & CO. Fort Wayne, Ind.

SCRAP MATERIAL

We purchase all grades of old Scrap Material and pay highest market prices. No quantity too large or too small for us to handle. Let us hear from you if you have old scrap material to dispose of.

H. KANDER & COMPANY

Bowling Green Ohio

Electrical Motors

4 5 H. P. G. E., 500 V., 1250 R. P. M., \$80.

2 7 1/2 H. P. Standard, 110 V., 1350 R. P. M., \$85.

4 7 1/2 H. P. Wagner, 220 V., 1100 R. P. M., \$85.

1 15 H. P. Northern, 110 V., 1200 R. P. M., \$160.

4 15 H. P. Kentucky, 500 V., 950 R. P. M., \$150.

1 25 H. P. Fort Wayne, 500 V., 1000 R. P. M., \$230.

1 45 H. P. Allis-Chalmers, 220 V., 875 R. P. M., \$365.

Pan Electric Mfg. Co. 735 So. 4th St., ST. LOUIS, MO.

In replacing our manufacturing equipment we find the following first-class

Used Machine Tools

which we offer at attractive prices

16"x 6" Reed.

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20"x 8" Lodge & Shipley, Q. C. G.

20"x10" Lodge & Shipley, Q. C. G.

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SPECIAL LATHES

No. 3 Lodge & Shipley Rapid Reduction Lathe.

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METAL SAWS

Globe Power Hack Saw, 8" capacity.

MISCELLANEOUS MACHINE

One Marion Double Grinder.

One Marion Double Grinder on stand.

One Diamond Disk Grinder on column.

One Sturtevant Blower, diameter of outlet

2 1/2".

One "Ohio Planer," 34"x24"x12", with two

heads on cross rail.

Universal Swivel Table for Radial Drill.

Brown & Sharp Grindstone Frame for 5"x

36" stone.

One Mueller Grindstone Frame for 4"x12"

stone.

One 12"x40" Mumford Molding Machine.

Write for complete description with prices

of machines in which you are interested.

The Lodge & Shipley Machine Tool Co.

CINCINNATI, OHIO

Pumping Units for Sale

I offer for quick action two (2) Morris Centrifugal Pumps, each 14-inch suction, 12-inch discharge; capacity 40,000 gallons per hour; direct connected to Armstrong-Sims center-crank engine. Used two years; excellent condition. Subject inspection prior sale. \$675. Special terms, 1/2 cash, 1/2 in baled cotton at market price.

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**TRACTION ENGINE AND THRESHER
FOR SALE OR TRADE**

One complete J. I. Case threshing outfit; 3x10-inch cylinder, simple engine; steel separator 28x50 inches, big cylinder; engine tender; cost about \$2850; in fine shape; what have you? Texas coast lands for sale or trade.

LEAGUE CITY LAND CO., League City, Tex.

FOR SALE—New Lathes at Bargain Prices

Geared head 20"x10", 18"x10", 15"x8", 16"x8", 16"x6". Cone head 20"x10", 15"x8", 15"x6". All the above with semi-quick-change gears. Second-hand lathes with geared heads, quick-change gears, 16"x8", 16"x6", 15"x6". Second-hand lathes, cone head, plain gears, 29"x18", 27"x16", 20"x10", 18"x8", 13"x6", 13"x5".

CHAS. T. LEHMAN Birmingham, Ala.

Ice Machine**FOR SALE**

One 10-ton Linde Ice Machine direct connected to Murray Corliss Engine. Fine condition, ready for immediate delivery and service. We offer this machine at an exceptionally low price before we remove it from present location to our warehouse. Complete description, details and price will be cheerfully forwarded on request.

Pfannmueller Engineering Company
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CHICAGO

This Week—Grinders

- 1 No. 22 12x42 Landis.
- 1 No. 22 12x32 Landis.
- 1 No. 1 10x20 Landis.
- 1 Pratt & Whitney Plain.
- 1 No. 2 Modern Universal.
- 1 No. 10-B Besly Disc.
- 1 18" Gorton Combination Disc.
- 1 No. 1 Norton Tool and Cutter.
- 1 No. 3 Brown & Sharpe Tool.
- 1 No. 200 Heald Ring.
- 1 No. 210 Heald Ring.
- 1 No. 60 Heald Cylinder.

Next Week—Miscellaneous**VONNEGUT MACHINERY COMPANY
INDIANAPOLIS****DYNAMOS AND MOTORS, SWITCH-
BOARD INSTRUMENTS, FANS, Etc.**

- For quick removal—
- 150 K. W. 5-pole C. & C. to 4-valve Pumping engine. \$1400.00
 - 75 H. P. new G. E. 850 R. P. M. slip-ring 3-phase motor, with base pulley and controller. 500.00
 - 50 H. P. 2-phase G. E. complete, 850 R. P. M. 250.00
 - 50 H. P. 2-phase G. E. complete, 850 R. P. M. 280.00

**Carload Small Direct Current Semi-enclosed
Motors at following prices:**

- 1/4 H. P., 1400 R. P. M. \$8.50
- 1/2 H. P., 1400 R. P. M. 11.00
- 3/4 H. P., 1400 R. P. M. 16.00
- 1 H. P., 1400 R. P. M. 23.50

Special price in lots of ten.
We carry large stock electrical machinery.
Let us have your requirements.

R. Scheinert Co., 125 N. Third St., Phila., Pa.

THERE IS A REASON

why our properly rebuilt machinery
gives satisfaction

ASK US

ENGINES, CORLISS: 26x48 Flier & Stowell, heavy duty; 24x48 Hamilton; 18x42 Lane & Bodley; 16x42 Allis; 14x42 Hamilton; 14x36 Nagle; 12x30 Hamilton; 10x30 Hamilton; 10x24 Hamilton.

ENGINES, AUTOMATIC: 21x22 Ridgway; 19x18 Ball; 14x14 Ideal; 10x16x12 Buffalo Compound; 12x14 Green; 12x12 Armstrong & Sims; 10x18 Buckeye; 9x10 New Victory; 8x14 Noyes; 8x10 McEwen; 5x6 Harrisburg.

ENGINES, THROTTLING: 20x24 H. S. & G.; 16x18 Skinner; 16x18 Ames; 14x14 Lewis, vertical; 12x13 New Enterprise; 12x14 Gibbs; 11x16 H. S. & G.; 10x12 Ajax; 10x15 Nagle; 9x16 Brownell; 8x10 New Erie; 8x10 Brownell; 7x10 Atlas; 6x6 Beggs; 5x4 Kriebel.

BOILERS, STATIONARY: HIGH PRESSURE: 1 200 H. P. for 125 lbs.; 2 150 H. P. for 150 lbs.; 3 150 H. P. for 125 lbs.; 2 100 H. P. for 125 lbs.; 2 50 H. P. for 125 lbs. Standard from 150 H. P. to 20 H. P. for 100 lbs.

BOILERS, FIRE BOX: 150 to 10 H. P. high and low pressure.

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GENERATORS AND MOTORS: All sizes and kinds, belted and direct connected.

MISCELLANEOUS: Heaters, open and closed; pumps, all sizes; sawmills; corn mills and feed grinders; exhaust fans and blowers; woodworking machinery; iron-working tools; leather, rubber and canvas stitched belt; pipe, valves and engine and boiler fittings.

Sole manufacturers of the Leader Injector and Ejector. Ask for circular.

THE RANDLE MACHINERY CO.
1734 Powers St., Cincinnati, O.

\$275.00

Two 10 K. W. (200 lights) Ridgeway 110-volt dynamos, direct connected Ridgeway engines, with switchboards, in condition like new; only seen two years' service; \$275 each.

DUZETS & SON,

Hudson Terminal Bldg., New York.

D. C. UNITS, 250 VOLTS

- 300 K. W. Crocker-Wheeler, Wetherill engine. \$5500.00
- 160 K. W. General Electric to Ballwood engine. 2200.00
- 75 K. W. Crocker-Wheeler to Harrisburg engine. 1450.00
- 55 K. W. C. & C. to Harrisburg engine. 1000.00
- 35 K. W. Crocker-Wheeler to Ames engine. 900.00

Send for catalogue.
Geo. Sachsenmaier & Co., 143 N. 3d St., Phila., Pa.

20-Ton Ice and Light Plant for Sale

Good condition, practically new. Present gross earnings \$20,000. Net earnings can be increased to \$12,000 by installing Diesel engine. Good Texas town; population about 3000. No competition. Best bargain in the Southwest. Price \$35,000—one-third cash, balance liberal terms. Owner has other business.

O. J. MORRIS Houston, Tex.

DIESEL OIL ENGINE

170 hp. direct connected to 120 kw., 250 v. Generator, complete.
75 hp. belted type, complete.
Cheap Power. Sacrifice.

Address Power Equipment Company,
500 Fifth Ave., New York

FOR SALE

- 6 72"x18" Horizontal Boilers, butt strap, 125 lbs. working pressure.
- 1 10"x12" D. C. D. "Lidgerwood" Hoisting Engine and Boiler.
- 1 18"x12"x20" "Cameron" Pump.

HOWARD W. READ CO.

Third and Arch Sts. PHILADELPHIA, PA.

FOR SALE

Hoisting engines, gas engines, rock pulverizers, other miscellaneous pieces of machinery and spare parts for same. Will take 50 per cent. of invoice price for above f. o. b. San Antonio. Used twelve months. Apply

T. S. LAWRENCE, Auditor

Medina Valley Irrigation Co., San Antonio, Tex.

FOR SALE

Rebuilt lathes, drills, boring mills, hydraulic presses, pumps, compressors, steam engines, foundry equipment, marine gasoline engines, valves, fittings, etc. Condition guaranteed. Send for catalogue, specifying requirements.

Pennsylvania Iron Works Co., Eddystone, Pa.

**Tampa Machinery Exchange
TAMPA, FLA.**

Buy, Sell and Exchange Machinery
of All Kinds

WRITE US YOUR WANTS

Bargains for Quick Sale

- 2 175 K. W. Westinghouse revolving field 3-phase 60-cycle 220-volt 900 R. P. M. A. C. Generators.
- 2 100 K. W. 250-volt Belted Type Units.
- 1 60 K. W. 250-volt Belted Type Unit.
- 1 110 K. W. 250-volt Direct-connected Unit.
- 1 160 K. W. 250-volt Direct-connected Unit.
- 1 200 K. W. 250-volt Direct-connected Unit.
- 1 300 K. W. 3-wire 125-250-volt Unit.
- Gas Engines, 4 to 150 H. P., in stock.
- 1 4-ton Remington Refrigerating Machine.
- 1/2 to 40 H. P. A. C. and D. C. Motors in stock.

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**PORTABLE RETURN TUBULAR
BOILERS****CHEAP BEFORE REMOVAL**

2 100 H. P. "Erie City," Economic type.
1 150 H. P. No. 9 "Ames," Empire type.
These boilers are complete with all usual castings and fittings, in good working condition for 100 lbs. steam pressure. They have recently been purchased, and if sold before removed from present location, can offer them at a bargain.

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2-60-H. P. New Era Gas Engines.
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Formerly used by us. In good condition. Will sell cheap.

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**BOILERS, TANKS,
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- 3 Horizontal Tubular Boilers, 66"x16", good for 125 lbs.
- 1 Stack, steel plate, 66" diam., 90' high, good condition.
- 5 Steel Tanks, 9' diam., 6' high.
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- 2 No. 2 Force Pumps.
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- 3 Centrifugal Pumps, 1000, 600, 400 gals. capacity.
- 2 Worthington Feed Water Pumps.
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- 1 Keyseater.
- 1 Complete Sawmill Equipment, Clark & Garland and Allis-Chalmers equipment, good condition.

Located at Wilmington, North Carolina.

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One 50-horse-power Shunt wound,
110 volt, direct current motor. Also
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Direct Current Generating Sets, Boilers, Feed Water Heaters**Horizontal and Vertical Steam Engines****Air Compressors Steam Pumps and Mine Equipment**

All in Excellent Condition.

The above equipment displaced from 19 coal mines by
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SPECIAL BARGAINS**BOILERS**

- 3 250 H. P. Franklin Horizontal Water-Tube, 150 lbs. steam.
- 1 175 H. P. 72"x20" Horizontal Return Tubular, 120 lbs. steam.
- 1 150 H. P. 72"x18" Horizontal Return Tubular, 125 lbs. steam.
- 1 150 H. P. Babcock & Wilcox Water-Tube, 150 lbs. steam.
- 1 125 H. P. 66"x18" Horizontal Return Tubular, 125 lbs. steam.
- 1 80 H. P. Vertical, 100 lbs. steam.
- 1 70 H. P. 54"x16" Horizontal Return Tubular, 125 lbs. steam.

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- 28"x48" Hamilton.
- 26"x60" International.
- 20"x48" Allis.
- 18"x42" Watts-Campbell.
- 16"x36" Allis.
- 16"x36" Rickards.
- 14"x42" Hamilton.
- 12"x36" Scottsdale.
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- 1 18"x20 1/2"x13 1/2"x24" Ingersoll-Sargeant Class A Straight Line, two-stage. Capacity 940 cu. ft.
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- 1 12"x12 1/2"x16" Ingersoll-Sargeant Class C Straight Line. Capacity 275 cu. ft.
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DIRECT CONNECTED UNITS

- 1 200 K. W. 220-volt A. C. Westinghouse 3-phase 25-cycle Generator, direct connected to Buckeye Engine.
- 1 150 K. W. 250-volt D. C. Crocker-Wheeler Generator, direct connected to 14 1/2"x24 1/2" Wright Center-Crank Tandem Compound Automatic Engine, 200 H. P. M.
- 1 105 K. W. 220-volt 3-phase 60-cycle Westinghouse Alternator, direct connected to Buckeye Engine.
- 1 50 K. W. 125-volt D. C. Westinghouse 6-pole Generator, direct connected to 10 1/2"x10 1/2" Westinghouse Compound Engine, 315 R. P. M.

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WESTINGHOUSE ENGINES, GAS AND
GASOLINE ENGINES, HEATERS,
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- 22"x12" New York Safety. 36"x14" Smith.
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- 30"x22" Bement-Miles. 25"x18" Fildes.

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127-131 North Third Street PHILADELPHIA, PA.

Bargains in Rebuilt Boilers, Engines, Locomotives, Etc.
1 25 H. P. Rebuilt Fire Box Boiler, price \$200.
1 each 40, 60 and 80 H. P. Rebuilt Fire Box Boilers, with fittings, at a bargain.
1 each 60, 80 and 100 H. P. Horizontal Tubular Boilers.
1 each 6, 8 and 10 H. P. Vertical Boilers, complete.
2 16 H. P. Hoisting Engines, double drums, with boilers.
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1 10' dia. Mine Ventilating Fan, with engine.
1 10-ton "Baldwin" Saddle Tank Locomotive, 44" gauge.
1 30-ton "Climax" Geared Logging Locomotive, 3' gauge.
1 each 6, 8 and 10' Electric Mine Ventilating Fans (Thayer Pat.).
The above must be sold without reference to cost. Write us.

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We have 10 separate plants, containing Steam Producers and Natural Gas Engines, Generators, etc. We want to move quickly. Largest stock between Philadelphia and Chicago.

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- 27"x21" Pratt & Whitney.
- 26"x17" Johnson.
- 25"x12" Fildes.
- 22"x9" Lodge & Davis.
- 19"x8" LeBlonde, turret attachment.
- 18"x10" Schumacher & Boye, taper attachment.
- 18"x6" Hendey Lathe, taper attachment.
- 33" Extension Bed Gap Lathe.
- 18"x8" Reed.
- 22"x8" Schumacher & Boye Lathe.
- 20x12" Lodge & Davis.
- 19"x12" Fitchburg, with turret attachment.

PLANERS

- 11"x8" 10"x18" Betts.
- 60"x60"x14" Sellers, 4 heads.
- 60"x60"x14" Pond, 2 heads.
- 48"x48"x16" Detrick & Harvey Open-Side Planer, cross rail lengthened to plane 60" wide, 3 heads, supplementary rolling table.
- 36"x36"x12" New Haven, 1 head.
- 36"x33"x12" New Haven.
- 33"x33"x12" Woodward & Powell.
- 28"x28"x7" New Haven, light pattern.
- 28"x28"x7" Heavy pattern, has radius attachment.
- 42"x42"x12" New Haven.
- 48"x48"x8" Sellers, 2 heads, with blocking 54".
- 26"x26"x8" Putnam.

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- 24" American, back geared.
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Several small Shapers as well as traveling head, besides all sizes of new machines in stock.

MISCELLANEOUS

- 72" Bickford Vertical Boring Mill, 2 heads.
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- 48" Sellers Boring Mill, 2 heads.
- 36"x12" Heavy-Duty Slab Milling Machine.
- 30" Throat Double-End Punch and Shear, Sellers make, capacity 1 1/2", weight about 5,000 lbs.
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- No. 2 Warner & Swasey Wire Feed Screw Machines.
- 3-spindle Barr Sensitive Drill Press.
- 5-No. 103 Bliss Card Cutting Presses.
- 3500-lb. Bement, Miles & Co. Double Frame Steam Hammer.
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LIGHT STEEL RAILS

12, 16, 20, 25, 30, 35, 40 and 45 lb. Sections
Splice Bars, Track Bolts and Spikes, Frogs and Switches

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In All Sections for Immediate Shipment from Stock

RELAYING RAILS

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8, 12, 16, 20, 25, 30, 35, 40, 45 lb., at manu-
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Splice Bars for any section rail in stock.
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All second-hand materials guaranteed. Sub-
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Gauge. 150 Locomotives at our shops 6
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One 10-ton gasoline macadam roller,
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Will sell at a low price. Write

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60-67s-70s-74s-90s with angle bars
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One Land Pile Driver, 3000-lb. hammer, 50
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One Steel Stack, S. S., 6'x100'.
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CONCRETE MIXERS

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on trucks, side loader and water tank.
Has new drum and tracker wheels.
- 1 No. 10 Chicago Mixer, gasoline engine on
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A Buffalo Steam Ten-Ton Tractor and Roller, and
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Released by Pennsylvania R. R.

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35-lb., 40-lb., 56-lb., 60-lb., 70-lb., 80-lb.,
85-lb. and Angle Bars to lay same

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We handle first-class Relaying Rails, and do
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Low Prices on New FROGS and SWITCHES.

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LOCOMOTIVES, STEAM SHOVELS and RAILS

We have at our shops in Birmingham,
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Also, 10 Marion and Thew Shovels.
Also, 3000 tons of Relaying Rails, all
weights. Write us for prices and terms.

Birmingham Rail & Locomotive Co., Birmingham, Ala.

Locomotives

Four wheel type

40 tons; 17"x24"; 160 lbs. pressure

Overhauled
Modern

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12, 16, 20, 25, 30, 35, 40,
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With Splice Bars, Bolts,
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500 Tons 80-lb. Rails.

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Several Locomotives and Cars.

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2 10-ton and 1 8-ton Porter Locomotives, 36-
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PROMPT DELIVERY.
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UNITED STATES RAIL CO.
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Certificates of Inspection by Hildreth &
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70-C Bucyrus Shovel, good as new.
18-12-yard Western Air Dump Cars, first class.
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All Weights

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1000 Tons 75 Lbs. Per Yard.

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All sizes, 1/2" to 24"

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Also large assortment of Contractors' Equipment, Hoisting Engines, Boilers, Concrete Mixers, etc.; all thoroughly overhauled.

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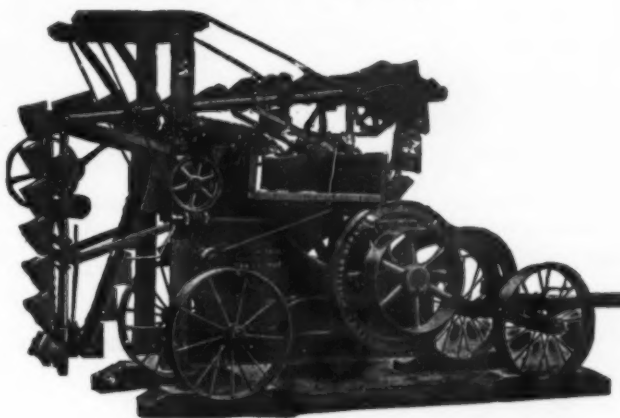
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This machine is designed, as far as possible, like a steam locomotive. It is strongly built in all its parts, and has a positive drive from engine to wheels.

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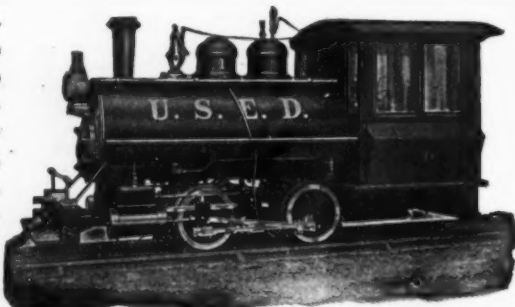
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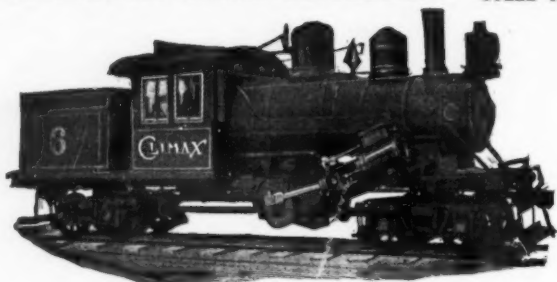
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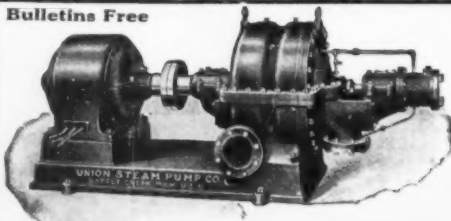
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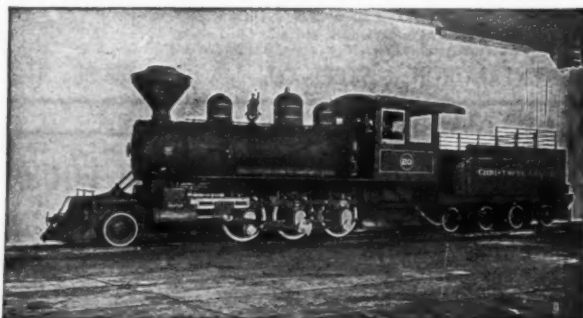
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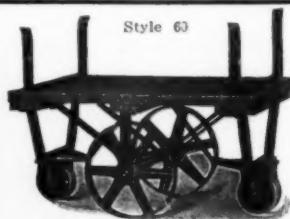
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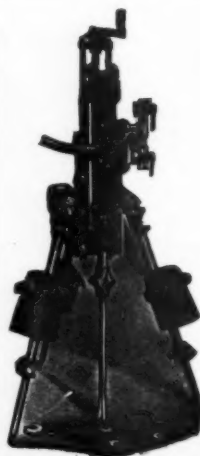
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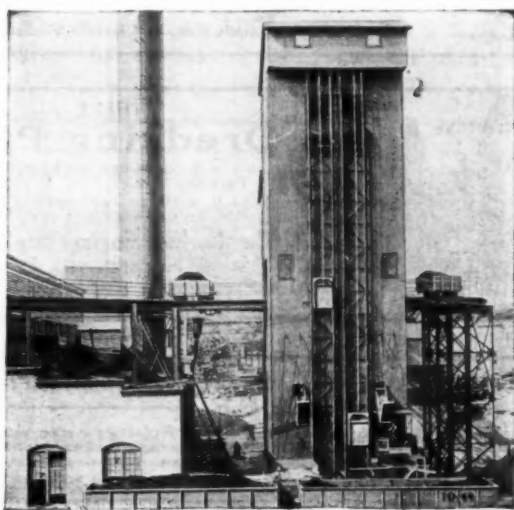
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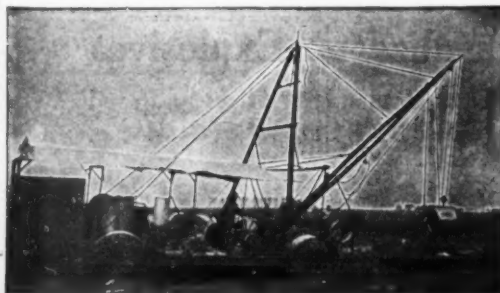
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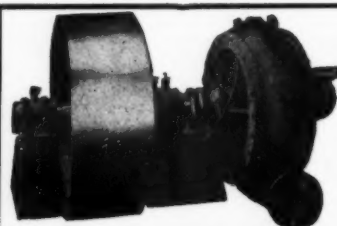
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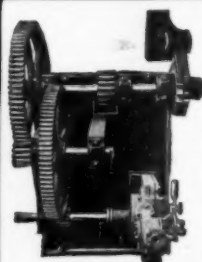
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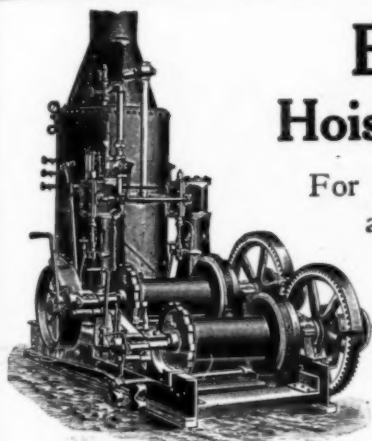
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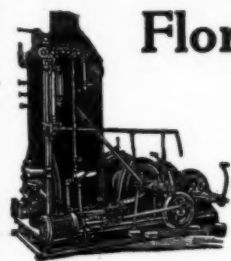
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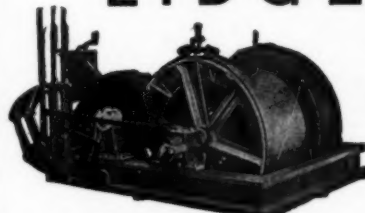
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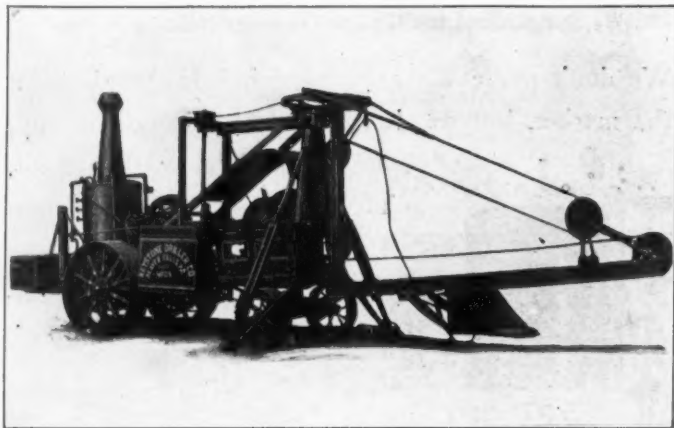
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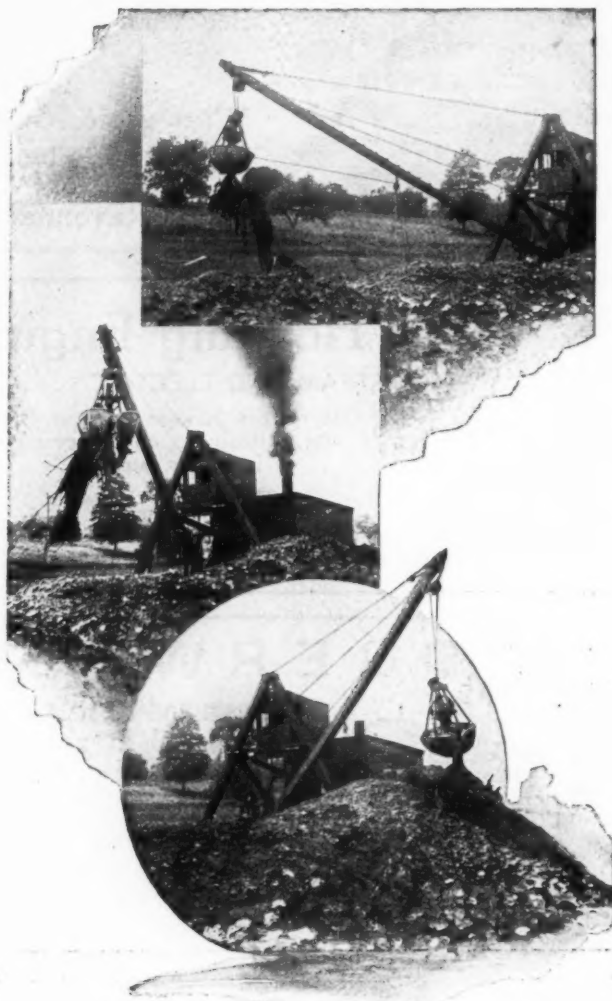
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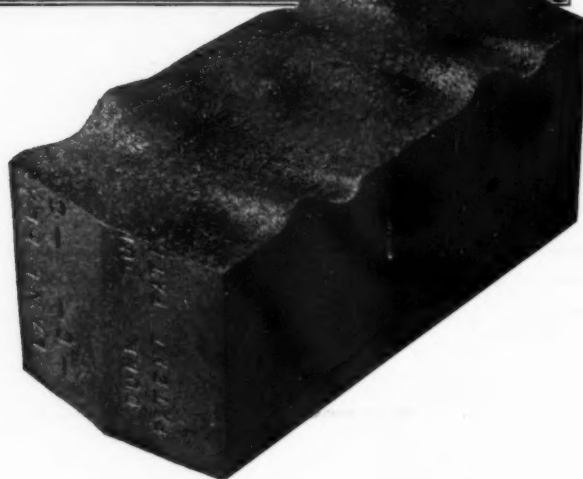
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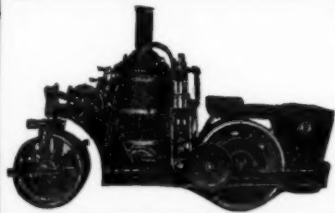
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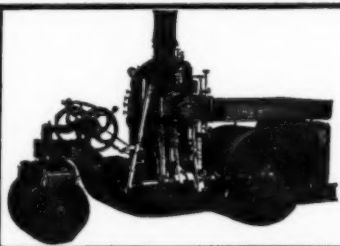
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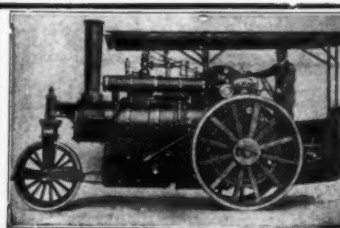
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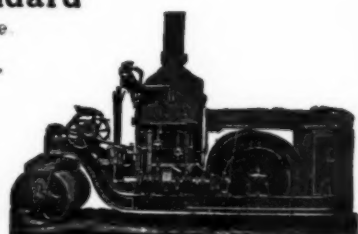
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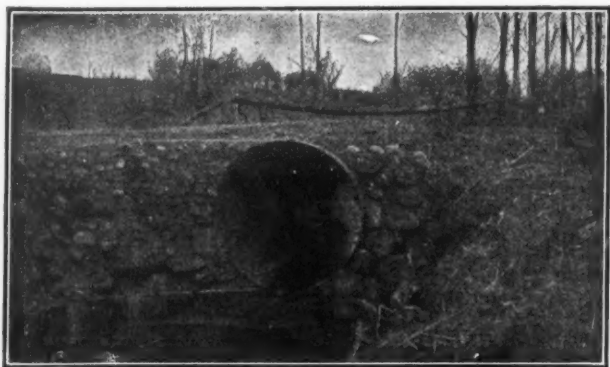
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Main Office and Factory: ROANOKE, VA.

BRANCH OFFICES: 324 Dickson Bldg., Norfolk, Va., and Robson Prichard Bldg., Huntington, W. Va.

Don't Just Order Culverts

Specify and insist on

AMERICAN INGOT IRON CORRUGATED CULVERTS

They won't rust, crack or bend in a lifetime. They are trouble and damage proof. Endorsed by U. S. Government and leading railroads. Make sure you get the genuine. They are *Guaranteed*.

Write us for particulars.

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Factory: ATLANTA, GA.

Little Rock, Ark.

Jacksonville, Fla.

New Orleans, La.

Greensboro, N. C.

Shawnee, Oklahoma

"Armco Quality Stands the Test—Dixie Service Does the Rest"

AMERICAN



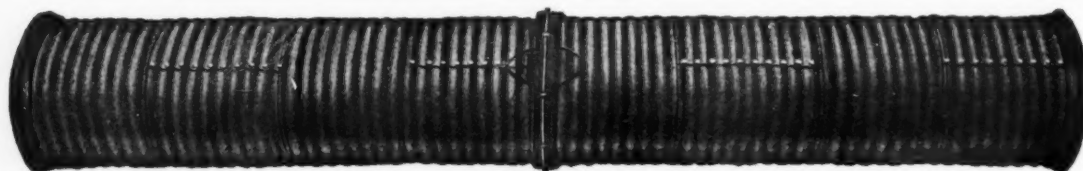
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INGOT IRON

THE RED "S" CULVERT—

The Red "S" culvert is manufactured only by this company, and every culvert you see with the big Red "S" on it, you will find that it has the angle iron reinforcements. The Red "S" is the STRONGEST on earth.

RED "S" stands for "Salisbury," "Strength," "Service" and "Stability." There is not a point in these culverts that can be improved upon. We make them as perfect as human skill can make them, and we sell them at a price which allows us to make them GOOD.



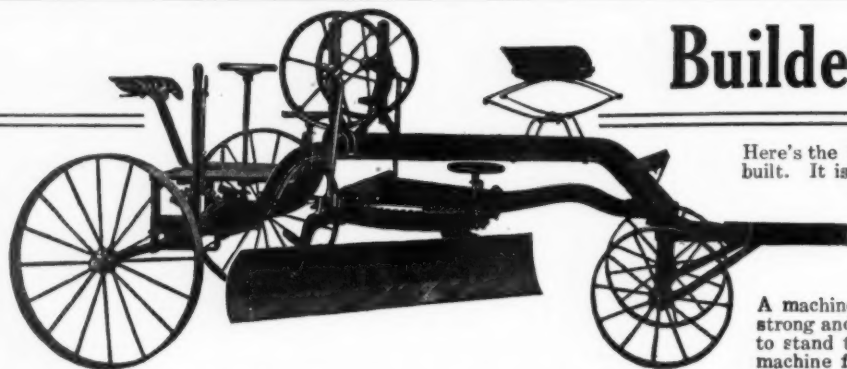
SALISBURY—STRENGTH—SERVICE—STABILITY

Guaranteed 25 Years.

Will Last 100 Years.

SALISBURY METAL CULVERT CO.

SALISBURY, N. C.



Builders of Good Roads

Here's the most practical and strongest medium weight machine ever built. It is the best grader for maintenance of roads, as well as for general purposes where heaviest graders are not required.

GALION "LITTLE IDEAL" STEEL ROAD GRADER

A machine that is endorsed by highway officials everywhere. Built strong and durable, it is light enough for two horses, yet guaranteed to stand the continuous pull of four good horses. Investigate this machine for efficiency. CATALOG AND DETAILS ON REQUEST

THE GALION IRON WORKS & MFG. CO., 117-119 East Main Street

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Building Concrete Paving

Washed Gravel

In Car, Scow and Barge Lots

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BEST TESTERS AND MOST DURABLE

THE CARLYLE PAVING BRICK CO., PORTSMOUTH, O.

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Weston & Brooker Quarry Company

LARGEST OUTPUT

QUICKEST DELIVERIES in the South Atlantic States

QUARRIES, CAYCE, S. C.

OFFICE, Columbia, S. C.

Adamantine Clay Products Co.

Manufacturers of

PAVING, FACE and COMMON BUILDING BRICK

NORTH MOUNTAIN, W. VA.

CRUSHED LIMESTONE

In any quantities. Deliveries to points in the Carolinas, Georgia, Florida, Alabama and Tennessee. Prompt shipments our specialty.

Chickamauga Quarry & Construction Co. Chattanooga, Tenn.

Reliance Crushers

Are fully described in our new CATALOG, which we send

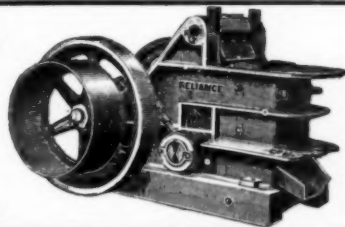
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Universal Road Machinery Co.

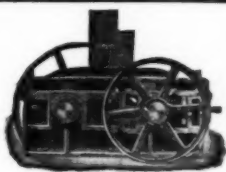
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ROCHESTER

BOSTON



Rock Crushers
Crushing Rolls
Magnetic Separators
Screens, Elevators



BUCHANAN ALL-STEEL CRUSHER

BUCHANAN CRUSHING ROLLS

C. G. BUCHANAN CO., Inc., 90 West St., New York, U. S. A.

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PHILADELPHIA OFFICE: CHAS. T. TOPPING MCHRY. CO.
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To keep in touch with Southern Development, read the Manufacturers Record.

Economical **WELLER-MADE** Dependable

COAL AND ASH HANDLING SYSTEMS

STONE AND GRAVEL PLANTS

CONCRETE AGGREGATE STORAGE SYSTEMS

Complete Elevating, Conveying and Power Transmission Equipments for Every Purpose

WELLER MFG. CO., Chicago

New York Baltimore St. Louis Dallas
50 Church St. Garrett Bldg. 520 Victoria Bldg. 711 Main St.

"ACME" (NESTABLE)

Corrugated NO-CO-RO Metal Culverts
Cut the Cost of Bridges!



"ACME" (Nestable) Corrugated Culverts make possible the building of enduring bridge structures of stone or concrete at minimum expense.

"ACME" (Nestable) Culverts come in sizes up to 72-inch diameter in from 16 to 10 gauge metal. On account of their "NESTABLE" feature—original with us—compact shipment is easy, and the culverts may be readily taken into and installed in difficultly accessible places.

Catalog G 9 shows how others are making savings. You can, too—Get a copy.

For quotations for delivery in North and South Carolina, address—THE CAROLINA METAL PRODUCTS COMPANY, Manufacturers in Wilmington, N.C.

For quotations for delivery in Virginia, West Virginia and Maryland, address—DOMINION METAL PRODUCTS CORPORATION, Manufacturers in Roanoke Va.

For quotations for delivery in Florida and Georgia, address—THE FLORIDA METAL PRODUCTS COMPANY, Manufacturers in Jacksonville, Fla.

THE CANTON CULVERT & SILO CO.
MANUFACTURERS
CANTON, OHIO, U.S.A.

"GENUINE OPEN HEARTH IRON" CORRUATED GALVANIZED CULVERTS



TANKS, TROUGHS, Etc.

Write for a copy of our monthly "News"

HARRY BROS. CO.

NEW ORLEANS, LA.

NEWPORT, KY.

CULVERTS

AMERICAN INGOT IRON

CORRUGATED AND GALVANIZED

ARE AN INVESTMENT

Our "Friction Joint" Gives Maximum Strength

SEND FOR A CATALOGUE

Tennessee Metal Culvert Co.

Nashville, Tenn.



If you are contemplating installing a culvert that will last for years to come, buy our

American Ingot Iron Culverts

We also highly recommend our

Lennon's Smooth Metal Flume and K. T. Water Gates

FOR IRRIGATION

Lone Star Culvert Company

HOUSTON, TEXAS

OPPORTUNITIES IN THE SOUTH

— FOR —

Manufacturers, Investors, Merchants, Farmers and Homeseekers

In the following pages leading railroads and a number of towns and cities invite your attention to the opportunities possessed by the rapidly developing South for every line of industry, for investments, and as a place for home-making in the city and on the farm.

The marvel of the day, commanding the world's attention to a greater extent probably than the development of any other section has ever received, is the amazing material upbuilding of the South. Everywhere men in every walk of life are beginning to study the South. They are coming to realize something of its matchless resources, to know something of the opportunities which it presents for manufacturing and for mining operations, for city building activities, for the utilization on a large scale of the cut-over timber lands and the reclaimable wet lands of the South.

With a view to presenting to the world from week to week the resources and the growth and the opportunities which are offered for all of these things, some of the leading railroads of the South and Southwest, some of the great public service corporations intimately identified with the upbuilding of this section and some of its progressive towns and cities from week to week tell the story of what they have to offer to the manufacturer, to the investor, to the merchant, to the pleasure-seeker, to the health-seeker. Study the pages that follow, and if you are at all interested in knowing about the South and its opportunities, its resources and its progress, if you want to keep in touch with that section which is attracting greater attention than any other part of America, get in communication with the organizations whose advertisements are to be found in the following pages.

Manufacturers Record, the Medium for Machinery Advertisements.



Splendid Factory Sites
in
Atlanta, Ga. Birmingham, Ala.

On A. B. & A. Right of Way
Rare opportunities for manufacturing in the heart of the South's most progressive section.
A. B. & A. is liberal in its policy and offers every inducement to industrial enterprises.
Address Atlanta, Birmingham & Atlantic R. R.
ATLANTA, GA.

Hosiery Mill Location

Will be glad to confer with interested parties regarding excellent location for hosiery mill. Splendid building now ready for machinery.

Healthful location, ample supply of labor, citizens of community interested in seeing development made.

Seaboard Air Line Railway

J. A. PRIDE, General Industrial Agent

NORFOLK, VA.

To the

MANUFACTURER and DISTRIBUTOR

Abundant supplies of coal, coke, iron, timber and other raw materials lie in the regions of Georgia and Alabama which are traversed by the

Central of Georgia Railway

Cheap electric power, numerous undeveloped water-powers, good home markets and excellent shipping facilities. Therefore, manufacturing conditions are ideal.

Many of the cities on the Central of Georgia Railway occupy advantageous positions for distributing warehouses, and a number of the larger northern and eastern manufacturers supply their southeastern trade from branch houses in these cities.

Full and detailed information upon application.

J. M. MALLORY, Industrial Agent
SAVANNAH, GEORGIA

THE WEST POINT ROUTE

Atlanta & West Point Railroad

THE WESTERN RAILWAY OF ALABAMA

Offers excellent locations for
Truck, Fruit, Stock and General Farming
Available Factory Sites. Abundance of Raw Material and Good Transportation Facilities
Write for information.

E. S. CENTER, General Agent, ATLANTA, GA.

Attractive Factory Sites

ON THE

Illinois Central Railroad

For full particulars address the undersigned

Free books of information on farm lands issued by the
Illinois Central Railroad

ABOUT THE SOUTH

MISSISSIPPI—A WONDERFUL AGRICULTURAL STATE

LOUISIANA—NATURE'S GARDEN SPOT

MR. FARMER, THE YAZOO-MISSISSIPPI DELTA
IS CALLING YOU

THE PHILOSOPHY OF A NORTH MISSISSIPPI
FARM

SOUTH MISSISSIPPI, THE SETTLER'S CHANCE

Everyone who would like a Southern home or investment should have a copy of one or all of these books. For free copies address

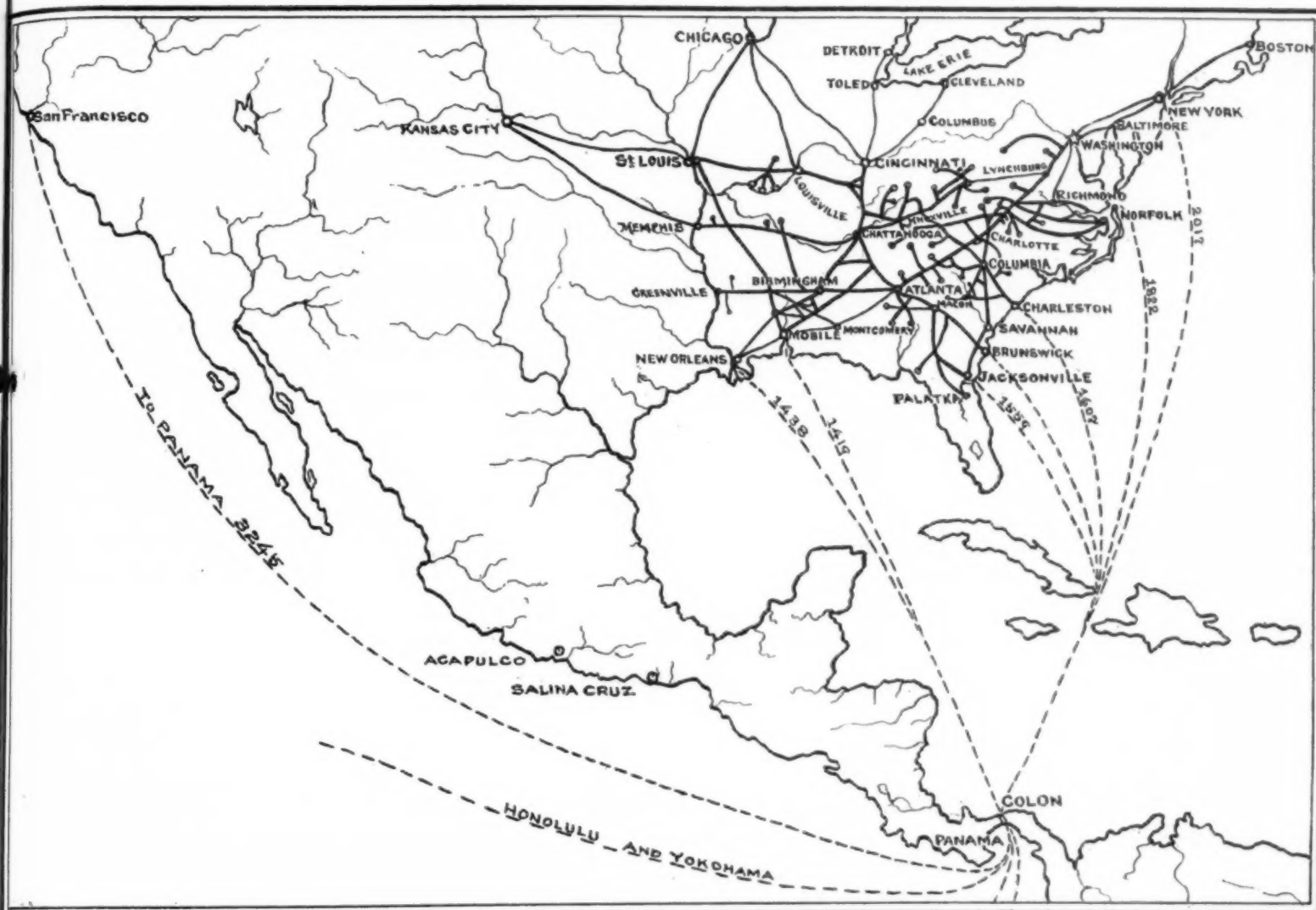
J. C. CLAIR

Industrial and Immigration Commissioner

ILLINOIS CENTRAL RAILROAD COMPANY

135 East 11th Place, CHICAGO, ILL.

The Map Tells the Story



Get Closer to South American Trade

This is the Southern manufacturer's "psychological moment" to establish himself with the valuable South American and Oriental trade.

Two recent happenings (the European wars and Panama Canal opening) have thrown wide open the doors of Southern American trade to manufacturers of the United States.

The South is the strategic location from which to serve these fast developing South American markets.

Look at this map and be convinced. Mobile is nearer by more than 600 miles to the Panama Canal than is New York City. Other Southern ports have corresponding advantages in distance. Notice the excellent railroad facilities from the large inland cities of the West and South to the South Atlantic Ocean and Gulf ports.

The Ten-Thousand-Mile Railroad System of The Southern Railway Reaches All the Larger Cities of This Resourceful Territory

The greatest supply of timber east of the Rocky mountains is to be found in the South. Her coal measures and iron resources are practically inexhaustible. Clays and earths of inestimable value are obtainable in every State. The wonderful hydro-electric developments of recent years make available over one million

horse-power. Reliable labor is plentiful at a very reasonable wage scale in all Southern localities.

If you want to reduce your manufacturing costs, establish a distributing warehouse or locate in America's most charming home section, give us the opportunity to aid you in selecting a favorable site. Our services are given without charge.

Virginia	Alabama
N. & S. Carolina	Mississippi
Georgia	Tennessee
Florida	Kentucky

M. V. RICHARDS
Land and Industrial Agent
Room 52 Washington, D. C.

Southern Railway
Mobile & Ohio R. R.
Georgia Southern & Fla. Ry.
Virginia & Southwestern Ry.

CHEAP POWER

ABUNDANT RESOURCES

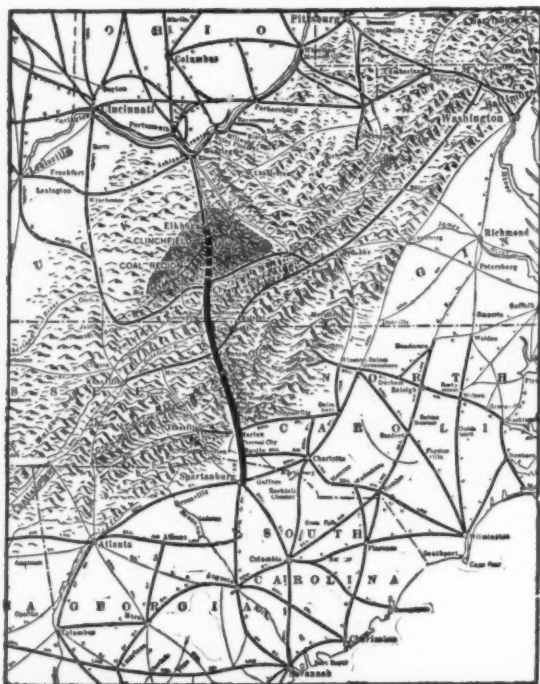
Advantages that Compel Attention to Opportunities Along the Clinchfield

At the northern terminus of the Carolina, Clinchfield & Ohio Railway are the rich coal lands of Southwest Virginia. These are being developed on a very broad scale by the Clinchfield Coal Corporation, whose output is now 2,000,000 tons annually and is steadily being increased. The enormous expense of building the Clinchfield across the heart of the Blue Ridge Mountains and maintaining a grade of one-half of one per cent. against south-bound freight was justified to enable this coal to be delivered cheaply and in large volumes to the Piedmont Section of the South, with its numerous cotton mills and diversified manufacturing plants.

Industrial plants, therefore, that are located along the Clinchfield will always be able to obtain an abundance of coal at comparatively low rates, thus enabling power to be generated most economically.

Then, too, many of the mountain streams along the Clinchfield offer splendid opportunities for hydro-electric development, thus rendering available an additional source of cheap power.

To cheap power add the availability of such important raw materials as cotton, hardwoods, various mineral deposits, the products of farm and orchard; abundance of white labor, a most healthful climate, and large consuming markets within easy reach, and where can be found more ideal conditions for economical and profitable manufacture?



An insight into the opportunities offered by the Clinchfield can be obtained from our booklet, "The Land of Opportunity." Send for a copy, it's free.

Carolina, Clinchfield & Ohio Rwy.

"THE ROAD OF OPPORTUNITY"

R. F. BREWER, Industrial Agent

Johnson City, Tenn.

West Virginia's Resources

For Iron and Steel Industries

A careful canvass of plants in West Virginia on the B. & O. Railroad, or near it, which make iron and steel articles, shows 46 such plants, located as follows:

Wheeling, 15	Morgantown, 2	Weston, 1	Shinnston, 1
Parkersburg, 12	Sistersville, 2	Spencer, 1	Paden City, 1
Huntington, 3	Charles Town, 1	Cameron, 1	Wolf Summit, 1
Fairmont, 2	Point Pleasant, 1	Grafton, 1	New Martinsville, 1

The output of these plants embraces 25 distinct products, as follows:

Axles	Boilers	Gas Pumps	Brass Fittings
Nails	Castings	Sheet Iron	Structural Iron
Rails	Forgings	Steel Plates	Iron Drip Pans
Piping	Tinplate	Sash Weights	Mining Machinery
Stoves	Machinery	Iron Roofing	Tools and Tubing
Shovels	Muck Bars	Foundry Goods	Oil Well Supplies

Commenting editorially upon this canvass the Manufacturers Record states:

"Of the total value of the products of all industries in West Virginia in 1910, amounting to \$161,950,000, industries in which iron and steel enter were represented by \$38,711,000, of which \$22,435,000 were the value of the output of iron and steel works and rolling mills, \$6,732,000 of general shop construction and repairs by steam railroad companies, \$3,392,000 of foundries and machine shops, and \$2,151,000 of sheet iron, tin and copper products."

"West Virginia ranked fourth among the States of the country in 1912 in coke production, the State being one of the half a dozen in the Appalachian region containing 75 per cent. of the coal suitable for iron-making coke in this country. But not only is West Virginia shipping much of its coke to other parts of the country, but it is also shipping much of its coke-making coal to retort-oven plants in Illinois, Indiana and Ohio."

"It is time for West Virginia to expand the use of its own coke in a larger manufacture of pig-iron and to derive the full benefit from that industry in diversifying its iron and steel products."

"West Virginia was marked by Nature for production in manufacturing industries. Seventy per cent., or 17,000 of the 24,000 square miles, of its area are underlaid with coal of the finest quality and estimated at 231,000,000,000 tons."

"Above much of that coal are stands of timber, some of it a part of the remaining hardwood reserve of the country, covering more than 9,000,000 acres."

"Besides its coal, a determining factor in the ultimate location of industries of many kinds, West Virginia has unmeasured quantities of petroleum and natural gas for fuel, and its limestones and other rocks have already become the material for Portland cement and other products."

"Agriculturally, the development of the State has really only begun, inasmuch as attention has been directed largely upon the raw exploitation of its mineral and timber resources. That exploitation, however, has involved too much regard for immediate profit and too little for the creation of permanent industries that will be a source of constant wealth."

"Around the sources of raw material should rise the multitude of diversified industries of many kinds, and what is indicated in the 46 iron and steel working plants embodied in the Baltimore & Ohio canvass should incite local capital and investors in other parts of the country to make the most of West Virginia's industrial opportunities."

**Further facts on any phase of the iron and steel resources
and possibilities of West Virginia will be gladly furnished.**

Baltimore & Ohio Railroad

J. H. STEWART, Agricultural Agent
Morgantown, W. Va.

W. W. WOOD, General Industrial Agent
Baltimore, Md.

All Crops Yielding High Prices per Acre are Grown in FLORIDA

The biggest opportunity before the American farmer now is the raising of food products.

The temporary decrease in the demand for cotton, brought about by the European war, is paralleled by the certainty of an increase in demand for foodstuffs in the immediate future.

The world naturally looks to America to supply the deficiency of foodstuffs, and especially to those parts of America where diversified crops can be grown to best advantage.

The following table, based upon figures of the United States Department of Agriculture, strikingly emphasizes Florida's complete advantages of soil and climate for raising a wide range of crops that yield the highest price per acre:

AVERAGE CROP VALUE PER ACRE.			
Crop.	Acreage.	Value.	Value per acre
Cotton	36,011,000	\$887,350,000	\$24 64
Corn	105,820,000	1,692,092,000	15 99
Wheat	50,184,000	610,122,000	12 15
Hay	48,954,000	797,077,000	16 28
Oats	38,399,000	439,596,000	11 45
Barley	7,499,000	95,731,000	12 76
Orchard fruits.....	4,000,000	140,867,000	35 23
Irish potatoes.....	3,668,000	227,903,000	62 13
Garden vegetables.....	2,763,000	216,257,000	78 19
Rye	2,557,000	26,220,000	10 25
Flaxseed	2,291,000	21,399,000	9 34
Tobacco	1,216,000	122,481,000	101 55
Peanuts	870,000	18,272,000	21 00
Rice	827,000	22,090,000	26 70
Buckwheat	805,000	10,445,000	12 97
Sweet potatoes.....	625,000	42,884,000	68 61
Sugar beets.....	577,000	34,420,000	59 65
Citrus fruits.....	275,000	23,000,000	83 64
Small fruits.....	272,000	29,974,000	110 19
Sugar-cane	248,000	21,000,000	84 68
Total.....	307,861,000	\$5,479,180,000	\$17 79

Study this table carefully.

You will note that all the high values per acre are of crops that produce abundantly in Florida.

Corn	Hay	Irish Potatoes	Tobacco	Sugar Cane	Citrus Fruits
Cotton	Rice	Garden Vegetables	Peanuts	Sweet Potatoes	Small Fruits

Crops in Florida mature earlier than elsewhere, giving this State the advantage of higher prices that come to products first reaching the market.

All along the East Coast of Florida, from Jacksonville down, are splendid opportunities for the farmer to raise these profitable crops, and any information desired will be gladly furnished.

FLORIDA EAST COAST RAILWAY

J. E. INGRAHAM, Vice-President

ST. AUGUSTINE, FLA.

The Carolinas, Georgia and Alabama contain one-third of the 32,000,000 active cotton manufacturing spindles in the United States, producing a varied line of product, capable of wide expansion.

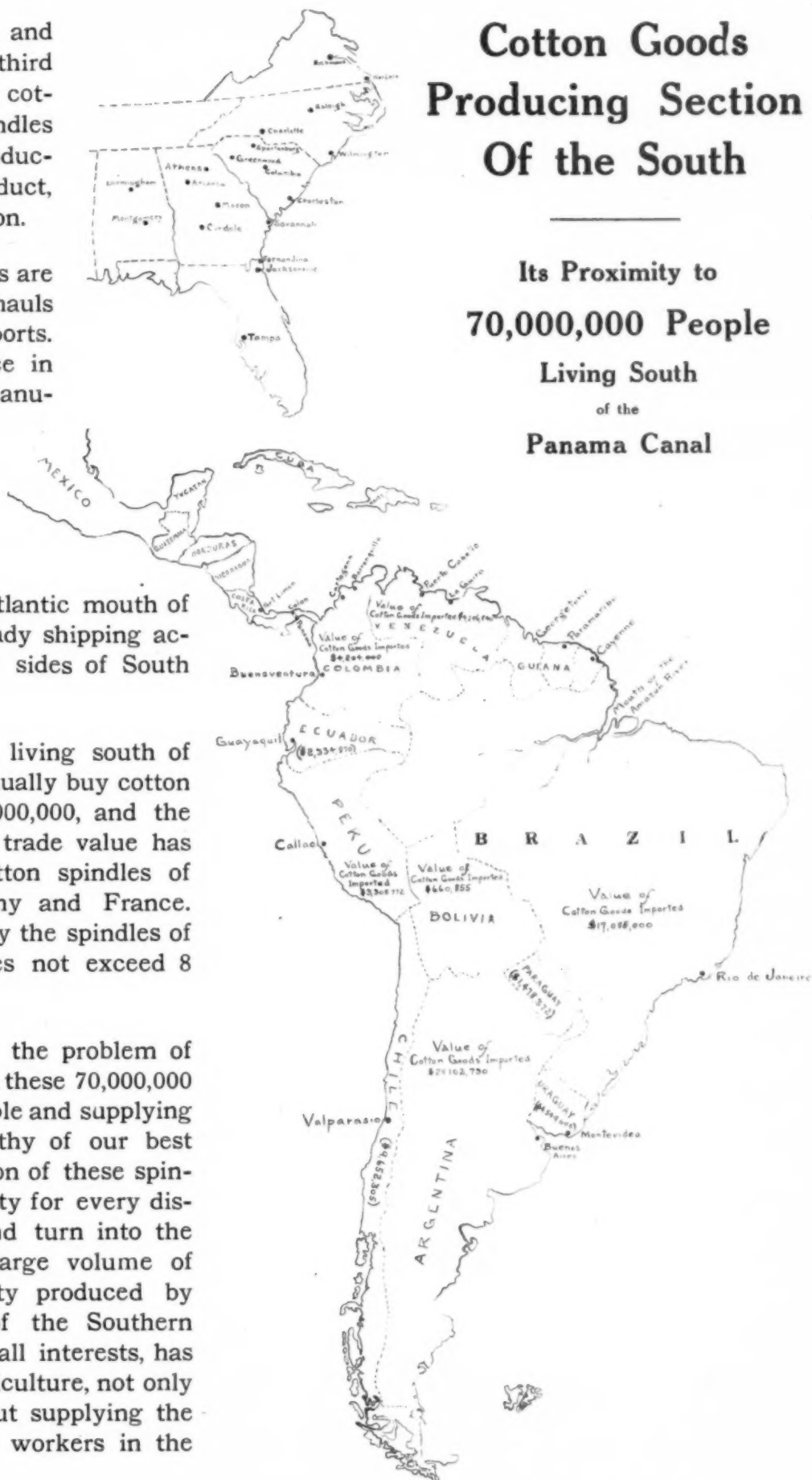
The mills in these States are located with reasonable hauls to the South-Atlantic ports. The maximum distance in South Carolina from manufacturing point to deepwater does not exceed 275 miles. Norfolk, Wilmington, Charleston, Savannah and Jacksonville are close to the Atlantic mouth of the Canal, affording ready shipping access to ports on both sides of South America.

The 70,000,000 people living south of the Panama Canal annually buy cotton goods valued at \$102,000,000, and the greater portion of this trade value has been held by the cotton spindles of Great Britain, Germany and France. That portion supplied by the spindles of the United States does not exceed 8 per cent.

Earnest efforts to solve the problem of our trade relations with these 70,000,000 cotton goods using people and supplying their demand are worthy of our best purposes. The operation of these spindles will make prosperity for every district in the States, and turn into the channels of trade a large volume of money. The prosperity produced by full speed operation of the Southern cotton mills, affecting all interests, has a direct effect upon agriculture, not only by the use of cotton, but supplying the demands of the busy workers in the mills.

Cotton Goods Producing Section Of the South

Its Proximity to
70,000,000 People
Living South
of the
Panama Canal



SEABOARD AIR LINE RAILWAY

"The Progressive Railway of the South"

J. A. PRIDE, General Industrial Agent

NORFOLK, VIRGINIA

CLASSIFIED INDEX OF ADVERTISEMENTS.

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Vitrified Wheel Co., Westfield, Mass.
- Accountants.**
Baltimore Audit Co., Baltimore, Md.
- Accumulator. (Hydraulic.)**
The French Oil Mill Mch. Co., Piqua, Ohio.
- Acetylene Service.**
Prest-O-Lite Co., Inc., The Indianapolis, Ind.
- Adding Machines.**
Burrroughs Adding Machine Co., Detroit, Mich.
- Agricultural Implements.**
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Chicago Pneumatic Tool Co., Chicago, Ill.
Clayton Air Compressor Works, Cambridge, Mass.
General Electric Co., Schenectady, N. Y.
Goulds Mfg. Co., Seneca Falls, N. Y.
Laidlaw-Dunn-Gordon Co., Cincinnati, Ohio.
Union Steam Pump Co., Battle Creek, Mich.
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Aluminum Company of America, Pittsburgh, Pa.
- Ammonia Valves and Fittings.**
Frick Co., The Waynesboro, Pa.
York Mfg. Co., York, Pa.
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Dodge Mfg. Co., Mishawaka, Ind.
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Gutlin, W. R., Hopkinton, Ky.
Milburn, Heister & Co., Washington, D. C.
Robinson, W. P., Greensboro, N. C.
Serrine, J. E., Greenville, S. C.
- Architects' Supplies.**
Sturtevant Co., L. S., Athol, Mass.
Weber & Co., F., Philadelphia, Pa.
- Architectural Iron Work.**
Hollis Iron & Wire Wks., J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
Schreiber & Sons Co., The L., Cincinnati, O.
Snead Architectural Iron Wks., Louisville, Ky.
- Arc Lamps. (See Lamps) (Arc and Incandescent.)**
- Art Glass.**
Hinswanger & Co., Memphis, Tenn.
- Asbestos.**
Asbestos Protected Metal Co., Beaver Falls, Pa.
Johns-Manville Co., H. W., New York, N. Y.
Southern Asbestos Mfg. Co., Inc., Richmond, Va.
- Asbestos Products.**
Asbestos Protected Metal Co., Beaver Falls, Pa.
- Asphalt.**
Harber Asphalt Paving Co., Philadelphia, Pa.
Gulf Refining Co., New York, N. Y.
Standard Oil Co., Inc., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.
- Asphalt Mixers.**
Erie Machine Shops, Erie, Pa.
- Asphalt Paving Plants.**
Cummer & Son Co., F. D., The., Cleveland, Ohio.
- Automobiles. (Electric Passenger.)**
General Vehicle Co., Long Island City, N. Y.
- Automobiles. (Second Hand.)**
Mar-Del Mobile Co., Baltimore, Md.
- Axles. (See Car Wheels, Axles and Trucks.)**
- Babbit Metal. (See Anti-Friction Metal.)**
- Bakelite Dielect.**
Continental Fibre Co., Newark, Del.
- Bankers and Brokers.**
Delaware Trust Co., Wilmington, Del.
Electric Bond & Share Co., New York, N. Y.
Halsey & Co., N. W., New York, N. Y.
Mercantile Trust & Deposit Co., Balt., Md.
New First National Bank, Columbus, O.
Nuveen & Co., John, Chicago, Ill.
Peabody, Houghtelling & Co., Chicago, Ill.
Southern States Development Co., New York, N. Y.
- Banks.**
First National Bank, Baltimore, Md.
First Nat'l Bank of Key West, Fla.
First National Bank, Richmond, Va.
Merchants-Mechanics' Nat'l Bank, Baltimore, Md.
New First National Bank, Columbus, Ohio.
National Exchange Bank, Baltimore, Md.
Provident Savings Bank & Trust Co., Cincinnati, O.
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Chesapeake Iron Works, Baltimore, Md.
Cincinnati Mfg. Co., Cincinnati, O.
Dow Wire & Iron Works, Louisville, Ky.
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Dufur, Baggett & Co., Baltimore, Md.
Meyers Mfg. Co., F. J., Hamilton, O.
Ohio Elevator & Machine Co., The, Columbus, O.
- Barges.**
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- Bar Iron. (Refined and Galvanized.)**
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Lackawanna Steel Co., Lackawanna, N. Y.
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Gulf States Steel Co., Birmingham, Ala.
- Bars, Wire, Wire Fabric, etc. (For Reinforced Concrete.)**
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Cincinnati Iron & Steel Co., Cincinnati, O.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Laclede Steel Co., St. Louis, Mo.
Trussed Concrete Steel Co., Youngstown, O.
- Bearings. (Oilless.)**
Metalline Co., Long Island City, N. Y.
- Bedford Stone**
Bedford Steam Stone Works, Bedford, Ind.
- Bells and Gongs.**
National Tube Co., Pittsburgh, Pa.
- Belting. (Leather, Canvas, Rubber.)**
American Supply Co., Providence, R. I.
Bailey-Leiby Co., Charleston, S. C.
Baltimore Belting Co., Baltimore, Md.
Cameron & Barkley Co., Charleston, S. C.
Chesapeake Belting Co., Baltimore, Md.
Druid Oak Belting Co., Inc., Baltimore, Md.
Bundy Belting Co., Baltimore, Md.
Goodyear Tire & Rubber Co., Akron, Ohio.
Graton & Knight Mfg. Co., Worcester, Mass.
Main Belting Co., Phila. Pa.
Schieren Co., Chas. A., New York, N. Y.
Smith-Courtney Co., Richmond, Va.
- Belting. (Chain.)**
Bartlett & Snow Co., C. O., Cleveland, O.
Calwell & Sons Co., H. W., Chicago, Ill.
Jeffery Mfg. Co., Columbus, O.
Link-Belt Co., Nicetown, (Philadelphia) Pa.
- Belt Cement.**
Graton & Knight Mfg. Co., Worcester, Mass.
- Belt Conveyors.**
Jeffery Mfg. Co., Columbus, O.
- Belt Dressing.**
Dixon Crucible Co., Joseph, Jersey City, N. J.
Gandy Belting Co., Baltimore, Md.
Graton & Knight Mfg. Co., Worcester, Mass.
- Belt Lacing. (Leather.)**
Graton & Knight Mfg. Co., Worcester, Mass.
- Belt Lacing and Supplies. (See Belting. Leather, Canvas, Rubber.)**
- Bicarbonate Soda. (Sap Stain Lumber Dip.)**
Church & Dwight Co., New York, N. Y.
- Billets.**
Gulf States Steel Co., Birmingham, Ala.
- Bins (Steel)**
Merritt & Co., Camden, N. J.
- Blackboards. (Slate.)**
East Bangor Con. Slate Co., The, East Bangor, Pa.
Johnson, E. J., New York, N. Y.
- Blocks. (Paving Cressed.)**
American Cressed Works, New Orleans, La.
- Block Fillers**
Harber Asphalt Paving Co., Phila. Pa.
Barrett Mfg. Co., Phila. Pa.
Standard Oil Co., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.
- Blowers and Exhaust Fans.**
American Blower Co., Detroit, Mich.
Buffalo Forge Co., Buffalo, N. Y.
De Laval Steam Turbine Co., Trenton, N. J.
General Electric Co., Schenectady, N. Y.
Green Fuel Economizer Co., Matteawan, N. Y.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
- Blow Torches. (For Soldering and Brazing.)**
Prest-O-Lite Co., Inc., The, Indianapolis, Ind.
- Bluing Ovens.**
Oven Equipment & Mfg. Co., The, New Haven, Conn.
- Boilers.**
Babcock & Wilcox Co., New York, N. Y.
Cameron & Barkley Co., Charleston, S. C.
Casey-Hedges Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Colesville Boiler Works, Coatesville, Pa.
Cole Mfg. Co., R. D., Newnan, Ga.
Erie City Iron Works, Erie, Pa.
Gibbs Machinery Co., Inc., Columbia, S. C.
Harris Bros. Co., Chicago, Ill.
Hartley Boiler Works, Montgomery, Ala.
Keeler Co., E., Williamsport, Pa.
Keystone Boiler & Foundry Co., Columbia, Pa.
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.
Lombard Iron Works, Augusta, Ga.
Mecklenburg Iron Works, Charlotte, N. C.
Murray Iron Works, Burlington, Ia.
New York Central Iron Works Co., Hagerstown, Md.
Phoenix Iron Works Co., Meadville, Pa.
Scholfield Iron Works, Macon, Ga.
Southern Engine & Boiler Works, Jackson, Tenn.
Valk & Murdoch Iron Works, Charleston, S. C.
Vogt Machine Co., Henry, Louisville, Ky.
Walsh & Weidner Boiler Co., Chattanooga, Tenn.
Zelnicke Supply Co., Walter A., St. Louis, Mo.
- Boiler Covering.**
Chesapeake Roofing & Pipe Covering Co., Baltimore, Md.
- Boiler Graphite.**
Dixon Crucible Co., Joseph, Jersey City, N. J.
- Boiler Tubes. (See Tubes, Boiler.)**
- Bolts, Nuts, Rivets, Studs and Washers.**
Progressive Mfg. Co., Torrington, Conn.
Republic Iron & Steel Co., Youngstown, O.
Upon Nut Co., The, Cleveland, O.
- Bonds. (Surety, etc.)**
Fidelity & Deposit Co. of Balt., Baltimore, Md.
- Bottling Outfits.**
Vilter Mfg. Co., Milwaukee, Wis.
- Brass Goods.**
Bailey-Leiby Co., Charleston, S. C.
Huckey Iron & Brass Works, Dayton, O.
Lunkenheimer Co., The, Cincinnati, Ohio
Powell Co., Wm., Cincinnati, Ohio
- Brass Railing and Grilles.**
Newman Mfg. Co., Cincinnati, Ohio
- Brewers' Machinery.**
Vilter Mfg. Co., Milwaukee, Wis.
- Brick. (Acid.)**
Hood Brick Co., B. Midlin, Atlanta, Ga.
- Brick. (Building.)**
Adamantine Clay Products Co., North Mountain, W. Va.
Am. Enamelled Brick & Tile Co., New York, N. Y.
Dixie Brick & Tile Co., Perryear, Tenn.
Hood Brick Co., B. Midlin, Atlanta, Ga.
Hydraulic Press Brick Co., St. Louis, Mo.
Kingsport Brick Corp., Johnson City, Tenn.
Scott Brick Co., Alex. A., Knoxville, Tenn.
Southern Face Brick & Range, Birmingham, Ala.
Standard Brick Co., Macon, Ga.
- Brick. (Enamelled.)**
Am. Enamelled Brick & Tile Co., New York, N. Y.
- Brick. (Fire.)**
Dixie Brick & Tile Co., Perryear, Tenn.
Harbison-Walker Refractories Co., Pittsburgh, Pa.
Kilian Fireproofing & Brick Works, Kilian, S. O.
Louisville Fire Brick Works, Highland Park, Ky.
Mexico Brick & Fire Clay Co., Mexico, Mo.
Pomona Terra-Cotta Co., Pomona, N. O.
Standard Brick Co., Macon, Ga.
Stevens' Sons Co., H., Macon, Ga.
Union Mining Co., Mt. Savage, Md.
- Brick. (Magnesia.)**
Harbison-Walker Refractories Co., Pittsburgh, Pa.
- Brick. (Paving.)**
Carlyle Paving Brick Co., Portsmouth, O.
Copeland-Ingles Shale Brick Co., Birmingham, Ala.
Dunn Wire-Out-Lug Brick Co., Cincinnati, Ohio
Southern Clay Mfg. Co., Chattanooga, Tenn.
Standard Brick Co., Macon, Ga.
- Brick. (Silica.)**
Dixie Brick & Tile Co., Perryear, Tenn.
Harbison-Walker Refractories Co., Pittsburgh, Pa.
- Brick and Clayworking Machinery and Supplies.**
Chase Fdry. & Mfg. Co., Columbus, O.
Fernholz Brick Machinery Co., St. Louis, Mo.
Freese & Co., E. M., Galion, O.
Steele & Sons, J. O., Stateville, N. O.
- Bridges. (Concrete.)**
Cunningham Construction Co., Shreveport, La.
Luten, Daniel B., Indianapolis, Ind.
Requarth Co., O. W., Charlotte, N. O.
Turner, O. A. P., Minneapolis, Minn.
- Bridges. (Rolling Lift.)**
Scherzer Rolling Lift Bridge Co., Chicago, Ill.
- Bridges. (Steel.)**
American Bridge Co. of New York, N. Y.
Austin Bros., Atlanta, Ga.
Belmont Iron Works, Philadelphia, Pa.
Champion Bridge Co., Wilmington, Ohio.
Chicago Bridge & Iron Works, Chicago, Ill.
Cunningham Construction Co., Shreveport, La.
East St. Louis Bridge Co., East St. Louis, Ill.
Oregon Bridge Co., Lebanon, Ohio.
Richmond Structural Steel Co., Richmond, Va.
Scherzer Rolling Lift Bridge Co., Chicago, Ill.
Vincennes Bridge Co., Vincennes, Ind.
Virginia Bridge & Iron Co., Roanoke, Va.
- Bridge and Structural Iron Paints.**
Chattanooga Paint Co., Chattanooga, Tenn.
- Brimstone.**
Union Sulphur Co., New York, N. Y.
- Brushes.**
Felton Brush Co., D. D., The, Atlanta, Ga.
- Buckets. (Clam Shell, Orange Peel, etc.)**
Hayward Company, New York, N. Y.
Williams Company, G. H., Cleveland, Ohio.
- Buckets. (Dredging, Excavating, Sewer, etc.)**
Hayward Co., New York, N. Y.
Mouhgan Mch. Co., Chicago, Ill.
Williams Co., The G. H., Cleveland, O.
- Buckets. (Grab.)**
Hunt Co., Inc., C. W., West New Brighton, N. Y.
- Buckets. (Ore Handling.)**
Caldwell & Son Co., H. W., Chicago, Ill.
Hayward Co., New York, N. Y.
Link-Belt Co., Nicetown (Philadelphia), Pa.
Williams Co., The G. H., Cleveland, O.
- Buhr Stones.**
Starr Co., R. F., Baltimore, Md.
- Builders and Contractors.**
Austin Bros., Atlanta, Ga.
Caldwell-Wingate Co., Atlanta, Ga.
Selden-Breck Construction Co., St. Louis, Mo.
Stone & Webster Eng. Corp., Boston, Mass.
Turner, O. A. P., Minneapolis, Minn.
White Companies, J. G., New York, N. Y.
- Building Stone.**
Bedford Steam Stone Works, Bedford, Ind.
- Building Supplies.**
Harris Bros. Co., Chicago, Ill.
Southern Building Material Co., Norfolk, Va.
- Burners. (Enclosed Flame Case.)**
Oven Equipment & Mfg. Co., The, New Haven, Conn.
- Burners. (Oil.) (See Fuel Oil Equipments.)**
- Bushings. (Oilless, for Loose Pulleys.)**
Metalline Co., Long Island City, N. Y.
- Cables.**
American Steel & Wire Co., Chicago, Ill.
Broderick & Bascom Rope Co., St. Louis, Mo.
Roebbing's Sons Co., John A., Trenton, N. J.
- Cables. (Underground.)**
American Steel & Wire Co., Chicago, Ill.
Safety Insulated Wire & Cable Co., New York, N. Y.
- Cables and Wires. (Insulated.)**
Safety Insulated Wire & Cable Co., New York, N. Y.
- Cableways. (Overhead Suspension.)**
American Steel & Wire Co., Chicago, Ill.
Broderick & Bascom Rope Co., St. Louis, Mo.
Consolidated Tramway Co., New York, N. Y.
Flory Mfg. Co., S., Hangor, Pa.
Lidgerwood Mfg. Co., New York, N. Y.
Roebbing's Sons Co., John A., Trenton, N. J.
- Can and Box Making Machinery. (Tin.)**
Bliss Co., E. W., Brooklyn, N. Y.
- Canning Machinery and Supplies.**
Robins & Co., A. K., Baltimore, Md.
Sprague Canning Machinery Co., Chicago, Ill.
- Caps. (Roofing.)**
Robertson Steel & Iron Co., W. F., Cincinnati, O.
- Carborundum Paper and Cloth.**
Carborundum Co., Niagara Falls, N. Y.
- Cars. (Dump, Industrial, Logging and Mine.)**
Austin Mfg. Co., Chicago, Ill.
Chase Fdry. & Mfg. Co., Columbus, O.
Curd, Geo. B., Cincinnati, Ohio
Easton Car & Construction Co., Easton, Pa.
Electric Wheel Co., Quincy, Ill.
Georgia Car & Locomotive Co., Atlanta, Ga.
Hunt Co., C. W., Inc., West New Brighton, N. Y.
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
Western Wheel Scraper Co., Aurora, Ill.
- Cars. (Motor, Gasoline.)**
White Co., The, Cleveland, Ohio.
- Cars. (Passenger and Freight.) (See Railroad Equipment and Supplies.)**
- Car Wheels, Axles and Trucks.**
Carnegie Steel Co., Pittsburgh, Pa.
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
- Cast Iron Pipe. (See Pipe.) (Cast Iron.)**
- Castings. (Aluminum.)**
Aluminum Company of America, Pittsburgh, Pa.
- Castings. (Brass and Bronze.)**
McKenna Bros. Brass Co., Pittsburgh, Pa.
Triumph Electric Co., Cincinnati, O.
- Castings. (Gray Iron.)**
Columbian Iron Works, Chattanooga, Tenn.
Georgia Car & Locomotive Co., Atlanta, Ga.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
Lynchburg Foundry Co., Lynchburg, Va.
Phoenix Iron Works Co., Meadville, Pa.
Poole Engineering & Machine Co., Baltimore, Md.
U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.
Valk & Murdoch Iron Works, Charleston, S. C.
Westbrook Elevator Co., Danville, Va.
- Castings. (Malleable Iron and Steel.)**
Columbus Malleable Iron Co., Columbus, Ohio.
General Malleable Co., Warren, O.
Marion Malleable Iron Works, The, Marion, Ind.
Missouri Malleable Iron Co., East St. Louis, Ill.
- Castings. (Steel.)**
Crucible Steel Castings Co., Lansdowne, Pa.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Phoenix Iron Works Co., Meadville, Pa.
Riverside Steel Casting Co., Newark, N. J.
- Ceilings. (Metal.)**
Edwards Manufacturing Co., Cincinnati, O.
Keighley Metal Cell & Mfg. Co., S., Pittsburgh, Pa.
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
Milwaukee Corrugating Co., Milwaukee, Wis.
Moesch-Edwards Corrugating Co., Covington, Ky.
- Cement**
Climchfield Portland Cem. Corp., Kingsport, Tenn.
Dixie Portland Cement Co., Chattanooga, Tenn.
Hartman Cement Co., Wm. G., Philadelphia, Pa.
Kirkpatrick Sand & Cement Co., Birmingham, Ala.
Kosmos Portland Cement Co., Inc., Louisville, Ky.
Lehigh Portland Cement Co., Allentown, Pa.
Security Cement & Lime Co., Hagerstown, Md.
Southern States Portland Cem. Co., Rockmart, Ga.
Standard Portland Cement Co., Leeds, Ala.
- Cement Machinery.**
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Aising Engineering Co., J. R., New York, N. Y.
Power & Mining Machinery Co., Oudaby, Wis.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Chains. (Dredge, Quarry, Steam Shovel.)**
Weimer Chain & Iron Co., Lebanon, Pa.
- Chemists. (Analytical and Consulting.)**
Davis, Geo. C., Philadelphia, Pa.
Froehling & Robertson, Richmond, Va.
Hunt & Co., Robt. W., Chicago, Ill.
Pittsburgh Testing Laboratory, Pittsburgh, Pa.
Wiley & Co., Baltimore, Md.
- Chloride Accumulator.**
Electric Storage Battery Co., The, Philadelphia, Pa.
- Chucks.**
Morris Twist Drill & Mch. Co., New Bedford, Mass.
- Cities and Towns. (Commercial and Industrial Opportunities.) (See Industrial, Agricultural and Commercial Opportunities.)**
- Clamps. (For Concrete Forms.)**
Sterling Wheelbarrow Co., Milwaukee, Wis.
- Clayworking Machinery. (See Brick and Clayworking Mch. and Supplies.)**
- Cleansing Compound. (Floors, Etc.)**
India Alkali Works, Boston, Mass.
- Clocks. (Watchman.)**
Watchman's Clock & Supply Co., New York, N. Y.
- Clutches. (Friction.)**
Medart Patent Friction Co., St. Louis, Mo.
Moore & White Co., The, Philadelphia, Pa.
- Coal.**
Climchfield Coal Corp., Danie, Va.
Climchfield Fuel Co., Spartanburg, S. C.
Consolidation Coal Co., Inc., New York, N. Y.
Tennessee Coal, Iron & R. R. Co., H'mgh'm, Ala.
- Coal Cutters.**
Jeffrey Mfg. Co., Columbus, O.
- Coal Handling Machinery.**
Bartlett & Snow Co., C. O., Cleveland, O.
Guarantee Construction Co., New York, N. Y.
Hayward Co., New York, N. Y.
Hunt Co., C. W., Inc., West New Brighton, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Co., Nicetown (Philadelphia), Pa.
Weller Mfg. Co., Chicago, Ill.
- Coal Tar and By-Products.**
Harrett Mfg. Co., Philadelphia, Pa.
- Coal Tipples.**
American Bridge Co. of New York, N. Y.
- Coke.**
Tennessee Coal, Iron & R. R. Co., H'mgh'm, Ala.
- Cold Store Doors.**
Brecht Co., The, St. Louis, Mo.
- Cpliges and Schools.**
Rensselaer Polytechnic Institute, Troy, N. Y.
- Colleges. (Technical.)**
Rensselaer Polytechnic Institute, Troy, N. Y.
- Columns. (Porch, Interior, Pergola.)**
Nickerson Mfg. Co., Knoxville, Tenn.
- Concrete Construction. (Reinforced.)**
Herry-Fortune Construction Co., Balaton, Ga.
Cunningham Construction Co., Shreveport, La.
Foster-Creighton-Gould Co., Nashville, Tenn.
Guarantee Construction Co., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Requarth Co., O. W., Charlotte, N. O.
Trussed Concrete Steel Co., Youngstown, O.
Turner, O. A. P., Minneapolis, Minn.
- Concrete Products.**
Gray Concrete Co., Thomasville, N. O.
- Concrete Curb Protector. (Steel.)**
Steel Protected Concrete Co., Philadelphia, Pa.
- Concrete Mixers. (See Mixers. (Concrete))**
- Concrete Reinforcing Bars.**
Horsure-Fuller Co., The, Cleveland, Ohio.
Carnegie Steel Co., Pittsburgh, Pa.
Gulf States Steel Co., Birmingham, Ala.
Hoffman & Co., R. O., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.
Laclede Steel Co., St. Louis, Mo.
Republic Iron & Steel Co., Youngstown, O.
Sweets Steel Co., Williamsport, Pa.
Trussed Concrete Steel Co., Youngstown, O.
- Concrete Reinforcing Bar Couplings.**
Marion Malleable Iron Works, Marion, Ind.
- Concrete Reinforcing Wire and Wire Fabric**
Roebbing's Sons Co., John A., Trenton, N. J.
- Condensers.**
Alberger Pump & Condenser Co., New York, N. Y.
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Crescent-Morris Co., Philadelphia, Pa.
Dean Bros., Steam Pump Wks., Indianapolis, Ind.
Westinghouse Machine Co., Pittsburgh, Pa.
York Mfg. Co., York, Pa.
- Conductor Pipe.**
Edwards Mfg. Co., Cincinnati, O.
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
Milwaukee Corrugating Co., Milwaukee, Wis.

Contractors. (Concrete.)

Berry-Fortune Construction Co., Easton, Ga.

Contractors. (Drainage.)

Thompson & Mosely, Greensboro, N. C.

Contractors. (Hydro-Electric Developments.)

Requarth Co., C. W., Charlotte, N. C.

Contractors. (Water Supply.)

Layne & Bowler Co., Houston, Tex.

Contractors' Machinery and Supplies. [See also Hoisting Machinery.]

American Clay Machinery Co., The, Bucyrus, Ohio.
 American Hoist & Derrick Co., St. Paul, Minn.
 Austin Mfg. Co., Chicago, Ill.
 Brev. Mach. Co., The John F., Ravenna, O.
 Contractors' Service Co., New York, N. Y.
 Card, Geo. B., Cincinnati, O.
 Flory Mfg. Co., S., Bangor, Pa.
 Hyde Bros. Steel & Rail Co., Pittsburgh, Pa.
 Marine Metal & Supply Co., New York, N. Y.
 Milburn Co., Alex. N., Baltimore, Md.
 Monaghan Mch. Co., Chicago, Ill.
 National Hoisting Engine Co., Harrison, N. J.
 Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
 Pipe & Contractors' Supply Co., New York, N. Y.
 Sherwood, E. O., New York, N. Y.
 Sterling Machinery Co., New York, N. Y.

Conveying and Elevating Machinery.

Bartlett & Snow Co., C. O., Cleveland, O.
 Caldwell & Son Co., H. W., Chicago, Ill.
 Consolidated Tramway Co., New York, N. Y.
 Flory Mfg. Co., S., Bangor, Pa.
 Guarantee Construction Co., New York, N. Y.
 Hunt Co., C. W., Inc., West New Brighton, N. Y.
 Jeffrey Mfg. Co., Columbus, O.
 Ledgeswood Mfg. Co., New York, N. Y.
 Link-Belt Co., Nicetown, (Philadelphia) Pa.
 Mathews Gravity Carrier Co., Ellwood City, Pa.
 McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
 Weiler Mfg. Co., Chicago, Ill.

Conveyor Belting.

Goodyear Tire & Rubber Co., Akron, Ohio.

Cooperage Stock and Box Shook Machinery.

Gerlach Co., Peter, Cleveland, O.

Coppersmith.

McMillan Bros., Jacksonville, Fla.

Cordage.

Broderick & Bascom Rope Co., St. Louis, Mo.
 Columbian Rope Co., Auburn, N. Y.
 Plymouth Cordage Co., North Plymouth, Mass.
 Waterbury Co., New York, N. Y.

Core Ovens.

Oven Equipment & Mfg. Co., The, New Haven, Conn.

Corn-Mill Machinery.

Raymond Bros. Impact Pulv. Co., Chicago, Ill.
 Starr Co., B. F., Baltimore, Md.
 Wolf Co., Chambersburg, Pa.

Cotton Oil and Products.

American Cotton Oil Co., New York, N. Y.

Cotton Yarns. (Commission Merchants.)

Paulson, Linkroum & Co., New York, N. Y.

Cotton-Gin Machinery.

Carver Cotton Gin Co., East Bridgewater, Mass.
 Continental Gin Co., Birmingham, Ala.
 Gibbs Machinery Co., Inc., Columbia, S. C.
 Murray Co., The, Atlanta, Ga.

Cotton-Mill Machinery.

Draper Co., Hopedale, Mass.
 Mason Machine Works., Taunton, Mass.
 Saco-Lowell Shop, Boston, Mass.
 Whitinsville Spinning Ring Co., Whitinsville, Mass.

Cottonseed-Oil Machinery.

Buckeye Iron & Brass Works, Dayton, O.
 Burruss Engineering Co., Atlanta, Ga.
 Cardwell Machine Co., Richmond, Va.
 Carver Cotton Gin Co., East Bridgewater, Mass.
 Continental Gin Co., Birmingham, Ala.
 French Oil Mill Machinery Co., Fiqua, O.
 Murray Co., The, Atlanta, Ga.
 Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Couplings.

American Spiral Pipe Works, Chicago, Ill.
 Golden's Foundry & Machine Co., Columbus, Ga.
 Wood's Sons Co., T. B., Chambersburg, Pa.

Couplings. (Car.)

National Tube Co., Pittsburgh, Pa.
 Weimer Chain & Iron Co., Lebanon, Pa.

Couplings. (Hose, Air, Gas, Steam and Water.)

National Tube Co., Pittsburgh, Pa.

Coverings. (Pipe, Boiler, etc.)

Johns-Manville Co., H. W., New York, N. Y.
 Southern Asbestos Mfg. Co., Inc., Richmond, Va.

Cranes. (Locomotive.)

American Hoist & Derrick Co., St. Paul, Minn.
 Ohio Locomotive Crane Co., Bucyrus, O.

Cranes. (Traveling, Hand, Power, Hydraulic.)

Lane Mfg. Co., Montpelier, Vt.
 Speidel, J. G., Reading, Pa.

Crayons.

Georgia Talc Co., Asheville, N. C.
 Lowell Crayon Co., Lowell, Mass.

Crosscutting Equipment.

Casey-Hedges Co., Chattanooga, Tenn.
 Struthers-Wells Co., Warren, Pa.
 Walsh & Welder Boiler Co., Chattanooga, Tenn.

Crosscutting Works.

American Crosscut Works, New Orleans, La.
 Internat'l Crosscut & Cons. Co., Galveston, Tex.
 National Lumber & Crosscut Co., Texarkana, Ark.
 Southern Crosscutting Co., Ltd., Slidell, La.
 Southern Wood Preserving Co., Atlanta, Ga.

Crossarms and Pins.

Western Electric Co., New York, N. Y.

Crossarms. (Crosscut.)

American Crosscut Wks., New Orleans, La.
 Internat'l Crosscutting & Cons. Co., Galveston, Tex.
 National Lumber & Crosscutting Co., Texarkana, Ark.
 Southern Crosscutting Co., Ltd., Slidell, La.
 Southern Wood Preserving Co., Atlanta, Ga.

Crossings. [See Railroad Frogs and Switches.]**Crosscut Machine.**

Standard Portable Saw Mill Co., New Orleans, La.

Crosscut. (Crosscut.)

American Crosscut Works, New Orleans, La.
 Internat'l Crosscut & Cons. Co., Galveston, Tex.
 National Lumber & Crosscut Co., Texarkana, Ark.
 Southern Crosscutting Co., Ltd., Slidell, La.
 Southern Wood Preserving Co., Atlanta, Ga.

Crosscut. (Steel.)

Carnegie Steel Co., Pittsburgh, Pa.

Crushed Stone.

American Ballast Co., Knoxville, Tenn.
 Chickamauga Quarry & Construction Co., Chattanooga, Tenn.
 Kirkpatrick Sand & Cement Co., Birmingham, Ala.
 Weston Brook Quarry Co., Columbia, S. C.

Crushers. (Corn and Cob.)

Grundler Pat. Crusher & Pulv. Co., St. Louis, Mo.
 Jeffrey Mfg. Co., Columbus, O.
 Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Crushers. (Rock.)

Austin Mfg. Co., Chicago, Ill.
 Buchanan Co., Inc., C. G., New York, N. Y.
 Power & Mining Machinery Co., Cudahy, Wis.
 Raymond Bros. Impact Pulv. Co., Chicago, Ill.
 Universal Road Mch. Co., Kingston, N. Y.
 Western Wheel Scraper Co., Aurora, Ill.
 Wheeling Mold & Fdry. Co., Wheeling, W. Va.

Crushing and Pulverizing Machinery.

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
 Aising Engineering Co., J. R., New York, N. Y.
 Austin Mfg. Co., Chicago, Ill.
 Bartlett & Snow Co., C. O., Cleveland, O.
 Buchanan Co., Inc., C. G., New York, N. Y.
 Grundler Pat. Crusher & Pulv. Co., St. Louis, Mo.
 Jeffrey Mfg. Co., Columbus, O.
 McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
 Raymond Bros. Impact Pulv. Co., Chicago, Ill.
 Stedman's Foundry & Machine Works, Aurora, Ind.
 Western Wheel Scraper Co., Aurora, Ill.
 Wheeling Mold & Fdry. Co., Wheeling, W. Va.

Culvert Pipe. (Cast Iron.)

American Cast Iron Pipe Co., Birmingham, Ala.
 Clow & Sons, James B., Chicago, Ill.
 Donaldson Iron Co., Emsus, Pa.
 Glamorgan Pipe & Foundry Co., Lynchburg, Va.
 Lynchburg Foundry Co., Lynchburg, Va.
 Macellion Iron & Steel Co., Macellion, Ohio.
 Standard Cast Iron Pipe & Foundry Co., Bristol, Pa.
 Wood & Co., R. D., Philadelphia, Pa.

Culverts. (Corrugated Metal.)

American Sheet & Tin Plate Co., Pittsburgh, Pa.
 Aruco Culvert Publicity Bureau, Cincinnati, O.
 Atlas Metal Works, Dallas, Tex.
 Canton Culvert and Sile Co., The, Canton, O.
 Dixie Culvert & Metal Co., Atlanta, Ga.
 Gallion Iron Works & Mfg. Co., The, Gallion, Ohio.
 Harry Bros. Co., Newport, Ky.
 Lone Star Culvert Co., Houston, Tex.
 Moschel-Edwards Corrugating Co., Covington, Ky.
 National Corrugated Culvert Mfg. Co., Warren, Pa.
 Salisbury Metal Culvert Co., Inc., Salisbury, N. C.
 Tennessee Metal Culvert Co., Nashville, Tenn.
 Virginia Metal & Culvert Co., Inc., Roanoke, Va.

Culverts. (Vitrified Pipe.)

Southern Sewer Pipe Co., Birmingham, Ala.
 Stevens Sons Co., H., Macon, Ga.

Cupola Furnaces.

Faxon Co., J. W., Philadelphia, Pa.

Curb Protector. (Steel.)

Steel Protected Concrete Co., Philadelphia, Pa.

Cuts. (Half-tone, Line, etc.)

Baltimore-Md. Engraving Co., Baltimore, Md.

Cutter Grinders.

Vitrified Wheel Co., Westfield, Mass.

Cutting. (Oxy-Acetylene Process.)

Frest-O-Lite Co., Inc., The, Indianapolis, Ind.

Dams. (Reinforced Concrete.)

Berry-Fortune Construction Co., Easton, Ga.

Derricks and Derrick Fittings.

American Hoist & Derrick Co., St. Paul, Minn.
 Evers Mac Co., The John F., Ravenna, O.
 Hayward Co., The, New York, N. Y.
 Monaghan Machine Co., Chicago, Ill.

Designers and Illustrators. (Printed Matter.)

Baltimore, Md. Engraving Co., Baltimore, Md.

Ditching Machinery.

American Hoist & Derrick Co., St. Paul, Minn.
 Fairbanks Steam Shovel Co., Marion, O.
 Gade Excavating Co., The, Iowa Falls, Iowa.
 Hayward Co., The, New York, N. Y.
 Marion Steam Shovel Co., Marion, O.
 Monaghan Machine Co., Chicago, Ill.
 Williams Co., The, G. H., Cleveland, O.

Doors. (Steel Rolling.)

Kinnear Mfg. Co., Columbus, O.

Doors. (Tin Clad.)

Victor Mfg. Co., Newburyport, Mass.

Doors, Sash and Blinds.

Columbus Iron Works, Columbus, Ga.

Draftsmen's Supplies.

Weber & Co., F., Philadelphia, Pa.

Dredge Chains.

Weimer Chain & Iron Co., Lebanon, Pa.

Dredge Cutters.

Norborn Engineering Co., Philadelphia, Pa.

Dredges. [See Excavating Machinery.]**Drills. (Electric.)**

Fort Wayne Electric Works, Fort Wayne, Ind.

Drills. (Pneumatic.) [See also Drills Rock and Mining.]

Drills. (Prospecting.)
 Fort Wayne Electric Works, Madison, Wis.
 Keystone Steam Well Mach. Co., Beaver Falls, Pa.

Drills. (Rock and Mining.)

Fort Wayne Electric Works, Madison, Wis.
 Independent Pneumatic Tool Co., Chicago, Ill.
 Jeffrey Mfg. Co., Columbus, O.
 Wickes Bros., Jersey City, N. J.

Drills. (Twist.)

McKenna Bros. Brass Co., Pittsburgh, Pa.
 Morse Twist Drill & Mch. Co., New Bedford, Mass.

Drive Well Points and Well Supplies.

National Tube Co., Pittsburgh, Pa.

Drop Forgings.

American Spiral Pipe Works, Chicago, Ill.

Drop Forging Machinery.

Bliss Co. E. W., Brooklyn, N. Y.

Dry Docks. (Builders of)

American Bridge Co. of New York, N. Y.

Drying Machinery.

American Process Co., New York, N. Y.
 Bailey-Lobby Co., The, Charleston, S. C.
 Buffalo Forge Co., Buffalo, N. Y.
 Coatesville, Boiler Works, Coatesville, Pa.
 Cummer & Son Co., F. B., The, Cleveland, Ohio
 Hervey Manufacturing Co., South Boston, Mass.
 Ruggie-Coize Engineering Co., New York, N. Y.
 Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Dry Kilns.

Buffalo Forge Co., Buffalo, N. Y.
 Moore Dry Kiln Co., L., Jacksonville, Fla.

Dry Kiln Equipment.

Moore Dry Kiln Co., L., Jacksonville, Fla.

Drying Ovens.

Oven Equipment & Mfg. Co., The, New Haven, Conn.

Dumbwaiters. (Hand Power.)

McKenna Bros. Brass Co., Pittsburgh, Pa.
 Speidel, J. G., Reading, Pa.

Dump Wagons and Wagon Boxes

Troy Wagon Works Co., Troy

Dust-Collecting System

Buffalo Forge Co., Buffalo, N. Y.
 King Co., F. E., Norfolk, Va.
 South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.

Dynamite. (Industrial and Agricultural.)

Atlas Powder Co., Wilmington, Del.
 Jefferson Powder Co., Birmingham, Ala.
 Keystone Nat'l Powder Co., Emporium, Pa.

Dynamos and Motors.

Assets Purchasing Co., Wheeling, W. Va.
 Fort Wayne Electric Works, Fort Wayne, Ind.
 General Electric Co., Schenectady, N. Y.
 Pan Electric Mfg. Co., St. Louis, Mo.
 Terry Steam Turbine Co., Hartford, Conn.
 Triumph Electric Co., Cincinnati, O.
 Western Electric Co., New York, N. Y.

Eaves. (Trough.)

Edwards Mfg. Co., Cincinnati, O.
 Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
 Milwaukee Corrugating Co., Milwaukee, Wis.

Ejectors. (Sewage.)

Lunkenheimer Co., The, Cincinnati, O.
 Pacific Flush Tank Co., New York, N. Y.

Electric Machinery. (Dynamometers, Generators, Motors, etc.)

Allis-Chalmers Manufacturing Co., Milwaukee, Wis.
 American Machine Co., Louisville, Ky.
 Crocker-Wheeler Co., Amper, N. J.
 Engberg Electric & Mechanical Works, St. Joseph, Mich.
 Fairbanks-Morse & Co., Atlanta, Ga.
 Fort Wayne Electric Works, Fort Wayne, Ind.
 General Electric Co., Schenectady, N. Y.
 Heer Engine Co., Portsmouth, O.
 Lee Electric Co., Baltimore, Md.
 Moore & Co., Edgar M., Pittsburgh, Pa.
 Pan Electric Mfg. Co., St. Louis, Mo.
 Piedmont Electric Co., Asheville, N. C.
 Robbins & Myers Co., Springfield, O.
 Schenectady Co., R., Philadelphia, Pa.
 Schroeder Electric Co., Evansville, Ind.
 Sturtevant Co., B. F., Hyde Park Boston, Mass.
 Triumph Electric Co., Cincinnati, O.
 Wilson Mch. Co., Harold R., St. Louis, Mo.

Electrical Contractors, Instruments and Supplies.

Crocker-Wheeler Co., Amper, N. J.
 Economy Fuse & Mfg. Co., Chicago, Ill.
 Fort Wayne Electric Works, Fort Wayne, Ind.
 General Electric Co., Schenectady, N. Y.
 Hill & Co., Walter E., Baltimore, Md.
 Johns-Manville Co., H. W., New York, N. Y.
 Lee Electric Co., Baltimore, Md.
 Levy-Morton Co., Columbus, Ga.
 Piedmont Electric Co., Asheville, N. C.
 Robbins & Myers Co., Springfield, O.

Electric Light Plants. (Portable.)

Schroeder Electric Co., Evansville, Ind.

Electro-Magnet. [See Magnet Electro.]**Electric Vehicles.**

General Vehicle Co., Long Island City, N. Y.

Elevating, Conveying and Power Transmission Machinery. [See also Conveying and Elevating Machinery and Power Transmission Mch.]**Elevators.**

American Electric Machine & Elevator Co., St. Louis, Mo.
 American Machine Co., Louisville, Ky.
 Atlas Machine Co., Louisville, Ky.
 Curran Elevator Co., James H., Cincinnati, O.
 Kansas City Elevator Mfg. Co., Kansas City, Mo.
 Miller Elevator Mfg. Co., Wm. A., St. Louis, Mo.
 Moffat Machinery Mfg. Co., Charlotte, N. C.
 Ohio Elevator & Machine Co., Columbus, O.
 Otis Elevator Co., New York, N. Y.
 Ridgway & Son Co., The, Coatesville, Pa.
 Speidel, J. G., Reading, Pa.
 Wansar Elevator Co., Baltimore, Md.
 Westbrook Elevator Co., Danville, Va.

Elevators. (Automatic.)

Mathews Gravity Carrier Co., Ellwood City, Pa.

Elevators. (Portable for Warehouses, etc.)

Economy Elevator Co., Chicago, Ill.

Elevator Bolts.

Upon Nut Co., The, Cleveland, O.

Elevator Buckets.

Caldwell & Son Co., H. W., Chicago, Ill.
 Hendrick Mfg. Co., Carbondale, Pa.
 Jeffrey Mfg. Co., Columbus, O.
 Link-Belt Co., Nicetown (Philadelphia) Pa.

Elevator Enclosures and Cabs.

Bolles Iron & Wire Works, J. E., Detroit, Mich.
 Cincinnati Mfg. Co., Cincinnati, O.
 Dow Wire & Iron Works, Louisville, Ky.
 Dufur & Co., Baltimore, Md.
 Dufur, Baggett & Co., Baltimore, Md.
 Meyers Mfg. Co., The Fred J., Hamilton, O.
 Otis Elevator & Machine Co., The, Columbus, O.
 Otis Elevator Co., New York, N. Y.

Elevator Rope. [See Wire Rope.]**Elevator Safety Gates.**

American Elec. Mch. & Elevator Co., St. Louis, Mo.
 Richmond Safety Gate Co., Richmond, Ind.

Emery Wheels. [See Grinding Wheels.]**Employment Bureau.**

Diamond Labor Agency, Chicago, Ill.

Engineers.**APPRAISAL.**

Day & Zimmerman, Philadelphia, Pa.
 Ferree Co., The H. G., Memphis, Tenn.
 Maxey, John Wharton, Houston, Tex.

BLAST FURNACES.

Smythe Co., The S. R., Pittsburgh, Pa.

CHEMICAL.

Crosby, Walter W., Baltimore, Md.
 Institute of Industrial Research, Washington, D. C.
 Pittsburgh Testing Laboratory, Pittsburgh, Pa.

CIVIL.

Arnold Co., The, Chicago, Ill.
 Blair & Drane, Charlotte, N. C.
 Brown & Clarkson, Washington, D. C.
 Bryant, Glaucus A., Wilson, N. C.
 Knowles, Morris, Pittsburgh, Pa.
 Mole H. E., New York, N. Y.
 Potter, Alexander, New York, N. Y.
 Rucker, B. Parks, Chattanooga, Tenn.
 Sand Engineering Co., Columbia, S. C.
 Solomon-Norcross Co., Atlanta, Ga.
 Stevens, Harry, Washington, D. C.
 Thompson & Mosely, Greensboro, N. C.
 Waldo, W., Houston, Tex.
 Walker Engineering Corp., Tampa, Fla.
 White Companies, J. G., New York, N. Y.

DAMS.

Quick, Alfred M., Baltimore, Md.
 Requarth Co., C. W., Charlotte, N. C.
 Spiker, William C., Atlanta, Ga.
 White Companies, J. G., New York, N. Y.

DRAINAGE AND IRRIGATION.

Brown & Clarkson, Washington, D. C.
 Bryant, Glaucus A., Wilson, N. C.
 Cory-Harrison & Co., San Antonio, Tex.
 Cummings, F. N. (Taylor), Clarendon, Va.
 Dabney Engineering Co., Memphis, Tenn.
 Ford, Bacon & Davis, New York, N. Y.
 Knowles, Morris, Pittsburgh, Pa.
 McGrady Bros. & Cheves, Inc., Charleston, S. C.
 Perkins, Edmund T., Engineering Co., Chicago, Ill.
 Thompson & Mosely, Greensboro, N. C.
 Walker Engineering Corp., Tampa, Fla.

EFFICIENCY.

Crosby, Walter W., Baltimore, Md.
 Institute of Industrial Research, Washington, D. C.
 Quick, Alfred M., Baltimore, Md.

ELECTRICAL.

Arnold Co., The, Chicago, Ill.
 Crocker-Wheeler Co., Amper, N. J.
 Kellbols, F. O., Baltimore, Md.
 Levy-Morton Co., Columbus, Ga.
 Lids, Martin J., Birmingham, Ala.
 Mole H. E., New York, N. Y.
 Rucker, B. Parks, Charlotte, N. C.
 Stone & Webster Eng. Corp., Boston, Mass.
 Tucker & Laxton, Charlotte, N. C.
 White, Gilbert C., Charlotte, N. C.

ELECTRIC LIGHTS AND POWER PLANTS.

Dabney Engineering Co., Memphis, Tenn.
 Ford, Bacon & Davis, New York, N. Y.
 Fuller-Coutt Co., St. Louis, Mo.
 Graves Engineering Co., Inc., New York, N. Y.
 Kellbols, F. O., Baltimore, Md.
 Levy-Morton Co., Columbus, Ga.
 Scofield Engineering Co., Philadelphia, Pa.
 Stone & Webster Eng. Corp., Boston, Mass.
 White Companies, J. G., New York, N. Y.
 White, Gilbert C.,

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Engineers.

MECHANICAL.

Arnold Co., The, Chicago, Ill.
Kent Robert S., Brooklyn, N. Y.
Lide, Martin J., Birmingham, Ala.
McLundie, A. S., Chattanooga, Tenn.
Stevens, Harry, Washington, D. C.
Tucker & Laxton, Charlotte, N. C.

MINING.

Brown & Clarkson, Washington, D. C.
Grimsley, G. P., Martinsburg, W. Va.
Haney, Marshall, Bridgewater, Va.
Jones, E. M., Chattanooga, Tenn.

MUNICIPAL.

Anderson & Christie, Charlotte, N. C.
Blair & Drane, Charlotte, N. C.
Brown & Clarkson, Washington, D. C.
Crosby, Walter W., Baltimore, Md.
Cory-Harrison & Co., San Antonio, Texas.
Fabney Engineering Co., Memphis, Tenn.
Elrod, Henry E., Dallas, Texas.
Graves Engineering Co., Inc., New York, N. Y.
Knowles, Morris, Pittsburgh, Pa.
McCready Bros. & Chaves, Inc., Charleston, S. C.
McCrory Co., J. R., Atlanta, Ga.
Pew, Arthur, Atlanta, Ga.
Shand Engineering Co., Columbia, S. C.
Shaw, F. H., Lancaster, Pa.
Walker Engineering Corp., Tampa, Fla.
White, Gilbert C., Charlotte, N. C.

PAVING AND ROAD.

Anderson & Christie, Charlotte, N. C.
Blair & Drane, Charlotte, N. C.
Bryant, Glauco A., Wilson, N. C.
Crosby, Walter W., Baltimore, Md.
Elrod, Henry E., Dallas, Texas.
Fuller-Coult Co., St. Louis, Mo.
Institute of Industrial Research, Washington, D. C.
McCready Bros. & Chaves, Inc., Charleston, S. C.
Shand Engineering Co., Columbia, S. C.
White, Gilbert C., Charlotte, N. C.

PUBLIC SERVICE PROPERTIES.

Day & Zimmerman, Philadelphia, Pa.
Ferre Co., The H. G., New York, N. Y.
Ford, Bacon & Davis, New York, N. Y.
Gliman, Harry L., Boston, Mass.
Graves Engineering Co., Inc., New York, N. Y.
Maxey, John Wharton, Houston, Tex.
Scotfield Engineering Co., Philadelphia, Pa.
Stone & Webster Engr. Corp., Boston, Mass.
White Companies, J. G., New York, N. Y.

REINFORCED CONCRETE. (Bridges, Buildings, etc.)

Caldwell-Wingate Co., Atlanta, Ga.
Commines, F. N. (Taylor), Claremont, Va.
Cunningham Construction Co., Shreveport, La.
Foster-Creighton-Gould Co., Nashville, Tenn.
Guarantee Construction Co., New York, N. Y.
Luten, Daniel B., Indianapolis, Ind.
Potter, Alexander, New York, N. Y.
Requarth Co., C. W., Charlotte, N. C.
Savannah Eng. & Construction Co., Savannah, Ga.
Spiker, William C., Atlanta, Ga.
Tucker & Laxton, Charlotte, N. C.
White Companies, J. G., New York, N. Y.

RIVER AND HARBOR.

Gilman, Harry L., Boston, Mass.

SEWERAGE AND WATERWORKS.

Anderson & Christie, Charlotte, N. C.
Blair & Drane, Birmingham, Ala.
Brown & Clarkson, Washington, D. C.
Bryant, Glauco A., Wilson, N. C.
Cory-Harrison & Co., San Antonio, Texas.
Dahney Engineering Co., Memphis, Tenn.
Ford, Bacon & Davis, New York, N. Y.
Graves Engineering Co., Inc., New York, N. Y.
Hill, Jr., Nicholas S., New York, N. Y.
Knowles, Morris, Pittsburgh, Pa.
Maxey, John Wharton, Houston, Tex.
Mayer, J. H., Birmingham, Ala.
Miller, Hiram Allen, Boston, Mass.
Myers, E. W., Greensboro, N. C.
Pew, Arthur, Atlanta, Ga.
Potter, Alexander, New York, N. Y.
Quirk, Alfred M., Baltimore, Md.
Shaw, F. H., Lancaster, Pa.
Stevens, Harry, Washington, D. C.
Walker Engineering Corp., Tampa, Fla.
White Companies, J. G., New York, N. Y.
White Gilbert C., Charlotte, N. C.

STEEL WORK AND ROLLING MILLS.

Smythe Co., The S. R., Pittsburgh, Pa.

STRUCTURAL STEEL.

Foster-Creighton-Gould Co., Nashville, Tenn.
Shearer, U. E., Memphis, Tenn.
Solomon-Norris Co., Atlanta, Ga.
Spiker, William C., Atlanta, Ga.

THEATRE CONSTRUCTION.

Gatlin, W. R., Hopkinsville, Ky.

Engines.

COMPRESSED AIR.

Dake Engine Co., Grand Haven, Mich.

GAS AND GASOLINE.

Allis-Chalmers Manufacturing Co., Milwaukee, Wis.
Cooper Co., O. & G., Mt. Vernon, Ohio.
Gibbs Machinery Co., Inc., Columbia, S. C.
Heer Engine Co., Portsmouth, O.
Mietz, A., New York, N. Y.
Otto Gas Engine Works, Philadelphia, Pa.
Southern Engine & Boiler Works, Jackson, Tenn.
Van Duzen, Roy Co., The, Columbus, O.
Westinghouse Machine Co., The, Pittsburgh, Pa.

OIL.

Fairbanks-Morse & Co., Atlanta, Ga.
Heer Engine Co., Portsmouth, Ohio.
Mietz, A., New York, N. Y.
Snow Steam Pump Works, The, New York, N. Y.
Wygodsky Engine Co., New York, N. Y.

STEAM.

Allis-Chalmers Manufacturing Co., Milwaukee, Wis.
American Hoist & Derrick Co., St. Paul, Minn.
Ball Engine Co., Erie, Pa.
Buffalo Forge Co., Buffalo, N. Y.
Cameron & Barkley Co., Charleston, S. C.
Cooper Co., O. & G., Mt. Vernon, O.
Dake Engine Co., Grand Haven, Mich.
Engberg Electric & Mechanical Works, St. Joseph, Mo.
Erie City Iron Works, Erie, Pa.
Gibbs Machinery Co., Inc., Columbia, S. C.
Griffith & Wedge Co., The, Zanesville, O.
Harris Bros. Co., Chicago, Ill.
Hench & Dromgold Co., York, Pa.
Houston, Stauwold & Gamble, Co., Cincinnati, O.
Lefell & Co., James, Springfield, O.
Lombard Iron Works, Augusta, Ga.
Mecklenburg Iron Works, Charlotte, N. C.
Murray Iron Works Co., Burlington, Pa.
Phoenix Iron Works Co., Meadville, Pa.
Schodfeld Iron Works, Macon, Ga.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
Vilter Mfg. Co., Milwaukee, Wis.
Westinghouse Machine Co., Pittsburgh, Pa.

Envelopes.

Young & Felden Co., Baltimore, Md.

Excavating Machinery.

American Clay Machinery Co., The, Bucyrus, Ohio.
Byer-Mach Co., The John F., Ravenna, O.
Fairbanks Steam Shovel Co., Marion, O.
Gade Excavating Co., The, Iowa Falls, Iowa.
Hayward Co., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Lidgerwood Mfg. Co., New York, N. Y.
Marion Steam Shovel Co., Marion, O.
Monaghan Machine Co., Chicago, Ill.
Morris Machine Works, Baldwinville, N. Y.
National Holding Engine Co., Harrison, N. J.
Northern Engineering Co., Philadelphia, Pa.
Williams Co., The G. H., Cleveland, O.

Excavators. (Trench.)

Fairbanks Steam Shovel Co., Marion, O.
Gade Excavating Co., The, Iowa Falls, Iowa.
Hayward Co., The, New York, N. Y.
Monaghan Machine Co., Chicago, Ill.

Excelsior Machinery.

Kline, Lewis T., Alpena, Mich.

Exhaust Heads.

American Spiral Pipe Works, Chicago, Ill.

Exhibits. (Machinery Builders' Equipment and Supplies.)

Builders' Exchange, Baltimore, Md.

Expansion Joints.

Badger & Sons Co., E. B., Boston, Mass.

Expanded Metal. (See Lath.)

Explosives.

Atlas Powder Co., Wilmington, Del.
Jefferson Powder Co., Birmingham, Ala.
Keystone Nat'l. Powder Co., Emporium, Pa.

Export Agents. (South America.)

Lutz, Friedr. W., Richmond, Va.

Factory Sites. (Town and Railroad.) (See Industrial, Agricultural and Commercial Opportunities.)

Fans. (Electric.)

General Electric Co., Schenectady, N. Y.

Robbins & Myers Co., Springfield, N. Y.

Fans. (Ventilating.) (See Blowers, Exhaust Fans.)

Fastener Driving Machine. (Corrugated Joint.)

Saracine Machine Co., Henton Harbor, Mich.

Feed-Water Heaters and Purifiers.

American Water Softener Co., Philadelphia, Pa.
Blake & Knowles Steam Pump Works, East Cambridge, Mass.
Erie City Iron Works, Erie, Pa.
Murray Iron Works Co., Burlington, Ia.
National Pipe Bending Co., New Haven, Conn.
Scaife & Sons Co., Wm. B., Pittsburgh, Pa.
Stewart Heater Co., Buffalo, N. Y.

Feed-Water Heater and Purifier and Oil Separator Combined.

Blake & Knowles Steam Pump Works, East Cambridge, Mass.
Stewart Heater Co., Buffalo, N. Y.

Felt. (Building, Sheathing.)

Harrett Mfg. Co., Philadelphia, Pa.

Fencing.

Gulf States Steel Co., Birmingham, Ala.

Fencing, Entrance Gates. (Iron, Steel, Wire.)

Bolles Iron & Wire Works, J. E., Detroit, Mich.
Dow Wire & Iron Works, Louisville, Ky.
Dufur & Co., Baltimore, Md.
New Jersey Wire Cloth Co., Trenton, N. J.
Ohio Elevator & Mach. Co., The, Columbus, O.

Fertilizer Machy. (See also Phosphate Machy.)

Stedman's Foundry & Machine Works, Aurora, Ind.
Vaik & Murdoch Iron Works, Oberlin, S. C.

Fibre. (Vulcanized.)

Continental Fibre Co., Newark, Del.

Files.

Harrett Co., G. & H., Philadelphia, Pa.

Nicholson File Co., Providence, R. I.

Filters. (Water, for Domestic and Industrial Purposes.)

American Water Softener Co., Philadelphia, Pa.
International Filter Co., Chicago, Ill.
New York Con. Jewell Fil. Co., New York, N. Y.

Fire Clay. (See Brick, Fire.)

Fire Door Fixtures.

Richmond Safety Gate Co., Richmond, Ind.

Victor Mfg. Co., Newburyport, Mass.

Fire Extinguishers.

Badger & Sons Co., E. B., Boston, Mass.

Fire Escapes.

Bolles Iron & Wire Works, J. E., Detroit, Mich.

Chesapeake Iron Works, Baltimore, Md.

Fire Places. (Brick and Tile.)

Hood Brick Co., B. Midlin, Atlanta, Ga.

Fireproof Building Construction. (See Concrete Construction.)

Fireproof Building Material.

Hannon Pipe Co., P., Louisville, Ky.

Johns-Manville Co., H. W., New York, N. Y.

Fireproof Doors and Shutters.

Kinnear Mfg. Co., Columbus, O.

Richmond Safety Gate Co., Richmond, Ind.

Victor Mfg. Co., Newburyport, Mass.

Fireproof Windows. (See Window Frames and Sashes. (Fireproof.)

Fittings. (Wire Rope.)

American Steel & Wire Co., Chicago, Ill.

Waterbury Co., New York, N. Y.

Fireproofing. (Brick and Tile.)

Hood Brick Co., B. Midlin, Atlanta, Ga.

Fixtures. (Electric Lighting.)

Hill & Co., Walter E., Baltimore, Md.

Flanges. (Iron and Steel.)

American Cast Iron Pipe Co., Birmingham, Ala.

American Pipe & Construction Co., Phila., Pa.

American Spiral Pipe Works, Chicago, Ill.

Dart Mfg. Co., E. M., Providence, R. I.

Glaumorgan Pipe & Foundry Co., Lynchburg, Va.

National Tube Co., Pittsburgh, Pa.

U. S. Cast Iron Pipe & Fdy. Co., Burlington, N. J.

Wood & Co., R. D., Philadelphia, Pa.

Flare Lamps.

Prest-O-Lite Co., Inc., The, Indianapolis, Ind.

Flexible Joints.

Morar Max Steam Joint Co., Inc., Louisville, Ky.

Flexible Metal Hose.

Goodyear Tire & Rubber Co., Akron, Ohio.

Floor Surfacing Machine. (Auto-Ball Bearing Electric.)

Wayvell Chappell & Co., Chicago, Ill.

Floor Tile.

Northerns Mantel Co., W. J., Memphis, Tenn.

Flooring. (Crescoted Block.)

Republic Crescoting Co., Indianapolis, Ind.

Flooring. (Hardwood, Maple, Oak.)

Nashville Hardwood Flooring Co., Nashville, Tenn.

Whiting, William A., Asheville, N. C.

Flour and Grist Mill Machinery and Supplies.

Caldwell & Sons Co., H. W., Chicago, Ill.

Salem Foundry & Machine Works, Salem, Va.

Starr Co., B. F., Baltimore, Md.

Wolf Co., Chambersburg, Pa.

Flue Lining.

Owensboro Sewer Pipe Co., Owensboro, Ky.

Southern Sewer Pipe Co., Birmingham, Ala.

Forges.

Buffalo Forge Co., Buffalo, N. Y.

Forgings.

Weimer Chain & Iron Co., Lebanon, Pa.

Foundations. (Waterproof.)

Requarth Co., C. W., Charlotte, N. C.

Foundry Equipment and Supplies.

Newport Sand Bank Co., Inc., Newport, Ky.

Faxon Co., J. W., Philadelphia, Pa.

Foundry Facings. (Talc and Soapstone.)

Georgia Talc Co., Asheville, N. C.

Foundry and Machine Shops.

Glaumorgan Pipe & Foundry Co., Lynchburg, Va.

Goldens Foundry & Machine Wks., Columbus, Ga.

Grainger & Co., Louisville, Ky.

Lombard Iron Works, Augusta, Ga.

Pools Eng'g & Mach. Co., Baltimore, Md.

Titus, E. E., Petersburg, Va.

Vaik & Murdoch Iron Works, Charleston, S. C.

Frogs. (See Railroad Frogs and Switches.)

Fuel Economizer.

Green Fuel Economizer Co., Mattawan, N. Y.

Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Fuel Oil.

Gulf Refining Co., Pittsburg, Pa.

U. S. Asphalt Refining Co., New York, N. Y.

Furnaces. (For Industrial Purposes.)

Smythe Co., The S. R., Pittsburgh, Pa.

Fuses. (Electrical.)

Economy Fuse & Mfg. Co., Chicago, Ill.

Fuse Shells. (Renewable.)

Economy Fuse & Mfg. Co., Chicago, Ill.

Fuses, Bases and Fittings.

Johns-Manville Co., H. W., New York, N. Y.

Galvanized Steel and Iron.

American Sheet & Tin Plate Co., Pittsburgh, Pa.

La Belle Iron Works, Steubenville, O.

McCalla, Inc., Harold, Philadelphia, Pa.

Portsmouth Steel Co., Portsmouth, O.

Wood Iron & Steel Co., Alan, Philadelphia, Pa.

Youngstown Sheet & Tube Co., Youngstown, O.

Garage and House. (Portable.)

Dixie Culvert & Metal Co., Atlanta, Ga.

Gas Blowers. (Turbine.)

Terry Steam Turbine Co., Hartford, Conn.

Gas Engines. (See Engines, Gas.)

Gas Machines.

Kemp Mfg. Co., O. M., Baltimore, Md.

Milburn Co., Alex. N., Baltimore, Md.

Gas Plants.

Power & Mining Machinery Co., Cudahy, Wis.

Western Gas Construction Co., Ft. Wayne, Ind.

Gas Producers.

Otto Gas Engine Works, Philadelphia, Pa.

Smythe Co., The S. R., Pittsburgh, Pa.

Westinghouse Machine Co., Pittsburgh, Pa.

Wood & Co., R. D., Philadelphia, Pa.

Gasoline and Kerosene.

Gulf Refining Co., Pittsburg, Pa.

Gas and Steam Fitters' Tools.

Saunders' Sons, D., Yonkers, N. Y.

Gears.

American Die & Tool Co., Reading, Pa.

Caldwell & Sons Co., H. W., Chicago, Ill.

Cresson-Morris Co., Philadelphia, Pa.

James Mfg. Co., D. O., Chicago, Ill.

Jeffrey Mfg. Co., Columbus, O.

Pools Engineering & Machine Co., Baltimore, Md.

Generating Sets.

Engberg Electric & Mechanical Works, St. Joseph, Mo.

Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Triumph Electric Co., Cincinnati, O.

Geologists.

Davis, Geo. C., Phila., Pa.

Froehling & Robertson, Richmond, Va.

Grimsley, G. P., Martinsburg, W. Va.

Glass. (Plate, etc.)

Rinswanger & Co., Memphis, Tenn.

Governors. (Steam Engine.)

Pickering Governor Co., Portland, Conn.

Grain Elevator Supplies.

Caldwell & Sons Co., H. W., Chicago, Ill.

Jeffrey Mfg. Co., Columbus, O.

Link-Belt Co., Nicetown (Philadelphia), Pa.

Granite.

Southern Marble & Granite Co., Spartansburg, S. C.

Graphite.

Dixon Crucible Co., Joseph, Jersey City, N. J.

Grates and Grate Bars.

Huber Grate Bar & Stoking Co., Baltimore, Md.

Thomas Grate Bar Co., Birmingham, Ala.

Gravel.

Arundel Sand & Gravel Co., Baltimore, Md.

Gravel. (Roofing and Road)

American Hallett Co., Knoxville, Tenn.

Gravity Spiral Chutes.

Mathews Gravity Carrier Co., Ellwood City, Pa.

Industrial Track Work. (See Railways, Ind.)**Injectors.**

Jenkinson Bros., New York, N. Y.
Lunkenheimer Co., The, Cincinnati, O.
Sellers & Co., Inc., Wm., Philadelphia, Pa.

Insulated Wires and Cables.

American Steel & Wire Co., Chicago, Ill.
Safety Insulated Wire & Cable Co., New York, N. Y.

Insulating Materials.

Continental Fibre Co., Newark, Del.
General Electric Co., Schenectady, N. Y.
Johns-Manville Co., New York, N. Y.
Standard Paint Co., New York, N. Y.

Insulating. (Tape.)

Standard Paint Co., New York, N. Y.

Insulating. (Varnishes and Compounds.)

Standard Paint Co., New York, N. Y.

Iron.

Allegheny Steel Co., Pittsburgh, Pa.
La Belle Iron Works, Steubenville, O.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
Union Iron Works, Los Angeles, Cal.
Wood Iron & Steel Co., Allentown, Pa.

Irrigation Machinery.

Omaha Steam Pump Wks., A. S. New York, N. Y.

Investment Securities.

Provident Savings Bank & Trust Co., Cincinnati, Ohio.

Junk Dealers.

Kander & Co., H., Bowling Green, Ohio.

Kettles. (Steam Jacket.)

Badger & Sons Co., E. H., Boston, Mass.

Key Seater. (Portable.)

Burr & Son, John T., Brooklyn, N. Y.

Knitting Machinery.

Acme Knitting Mch. & Needle Co., Franklin, N. H.

Labor Agency.

Diamond Labor Agency, Chicago, Ill.

Lace Leather.

Graton & Knight Mfg. Co., Worcester, Mass.

Lamps. (Arc and Incandescent.)

Boston-Economy Lamp Division, Danvers, Mass.
General Electric Co., Schenectady, N. Y.
Lee Electric Co., Baltimore, Md.
Piedmont Electric Co., Asheville, N. C.
Westinghouse Lamp Co., New York, N. Y.

Lamps. (Carbon and Tungsten.)

Newman Electric Lamp Co., Cincinnati, O.

Lamp Posts. (Electric, Gas.)

Union Foundry Co., Anniston, Ala.
Western Gas Construction Co., Ft. Wayne, Ind.

Lamp Standards. (Ornamental Iron.)

Union Foundry Co., Anniston, Ala.

Lands. (Mineral, Timber, Farm, etc.) (See Industrial, Agricultural and Commercial Opportunities.)**Landscape Architects** (See Engineers.) [Landscape]**Lath. (Expanded Metal.)**

Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
Milwaukee Corrugating Co., Milwaukee, Wis.
Trussed Concrete Steel Co., Youngstown, O.

Lathes. (Engine.)

Greaves, Klineham Tool Co., The, Cincinnati, O.

Lawn Furniture. (Wire.)

Bolles Iron & Wire Works, J. E., Detroit, Mich.

Leadite.

Leadite Co., Inc., The, Philadelphia, Pa.

Letter Sealing Machinery.

Sealograph Co., Kansas City, Mo.

Lights. (Portable Acetylene.)

Milburn Co., Alex. N., Baltimore, Md.

Lime. (Hydrated.)

Security Cement & Lime Co., Hagerstown, Md.

Limestone Products.

Security Cement & Lime Co., Hagerstown, Md.

Liquor Filters.

International Filter Co., Chicago, Ill.

Lithographers, Engravers.

Young & Selden Co., Baltimore, Md.

Lockers (Steel)

Bernstein Mfg. Co., Phila., Pa.
Keighley Metal Ceiling Mfg. Co., S., Pittsburgh, Pa.
Merritt & Co., Camden, N. J.

Locomotives.

INDUSTRIAL
Baldwin Locomotive Wks., The, Philadelphia, Pa.
Climax Mfg. Co., Corry, Pa.
Curd, Geo. H., Cincinnati, O.
Davenport Locomotive Works, Davenport, Ia.
Jeffrey Mfg. Co., Columbus, O.
Lima Locomotive Corporation, Lima, O.
Porter Co., H. K., Pittsburgh, Pa.
Southern Iron & Equipment Co., Atlanta, Ga.

RAILWAY.

Baldwin Locomotive Wks., The, Philadelphia, Pa.
Lima Locomotive Corporation, Lima, O.
Porter Co., H. K., Pittsburgh, Pa.

Looms and Weaving Machinery.

Draper Co., Hopedale, Mass.

Looms. (Jacquard.)

Mason Machine Works, Taunton, Mass.

Looms. (Power Looms.)

Saco-Lowell Shops, Boston, Mass.

Looms. (Tape.)

American Supply Co., Providence, R. I.

Lubricants.

Albany Lubricating Co., New York, N. Y.

Lubricants. (Graphite.)

Dixon Crucible Co., Joseph, Jersey City, N. J.

Lumber.

Industrial Lumber Co., Elizabeth, La.

Lumber. (Creosote.)

American Creosote Works, New Orleans, La.

Lumber. (Heavy Construction, Pitch Pine, etc.)

Industrial Lumber Co., Elizabeth, La.

Lumber. (Softwood.)

National Lumber & Creosote Co., Texarkana, Ark.

Lumber Buggies.

Boyle Steam Feed Works, Meridian, Miss.

Lumber Stackers.

Boyle Steam Feed Works, Meridian, Miss.

Machinery. (Special.)

Bills Co., E. W., Brooklyn, N. Y.

Machinery. (General.)

Elmer, Lewis T., Alpena, Mich.

Machinery. (Steam Engines.)

Universal Machine Co., Baltimore, Md.

Machinery and Supplies. (New and Second-Hand Bargains.)

Ansett Purchasing Co., Wheeling, W. Va.
Boston Iron & Metal Co., Balto., Md.
Casey Machinery Co., D. L., Springfield, O.
Cleveland Belting & Machinery Co., Cleveland, O.
Consolidated Iron & Metal Co., Chattanooga, Tenn.
Contractors' Service Co., New York, N. Y.
Duzets & Son, New York, N. Y.
Harris Bros. Co., Chicago, Ill.
Hittner's Sons Co., Henry A., Philadelphia, Pa.
Hyde Bros. Steel & Rail Co., Pittsburgh, Pa.
Lehman, Charles T., Birmingham, Ala.
Lodge & Shipley Mch. Tool Co., Cincinnati, O.
Marine Metal & Supply Co., New York, N. Y.
Moore & Co., Edgar M., Pittsburgh, Pa.
New River Co., Macdonald, W. Va.
Nassbaum & Co., V. M., Fort Wayne, Ind.
Pannmuller Engineering Co., Chicago, Ill.
Pipe & Contractors' Supply Co., New York, N. Y.
Power Equipment Co., New York, N. Y.
Prentiss Tool & Supply Co., New York, N. Y.
Rundie Machinery Co., Cincinnati, O.
Reed Co., Howard W., Philadelphia, Pa.
Sachsenmayer & Co., George, Philadelphia, Pa.
Sammel, Frank, Philadelphia, Pa.
Seyfert's Sons, Inc., L. F., Philadelphia, Pa.
South Side Fdry. & Mch. Co., Charleston, W. Va.
Temps Machinery Exchange, Tampa, Fla.
Toomey, Frank, Inc., Philadelphia, Pa.
Vonnegut Machinery Co., Indianapolis, Ind.
Wilson Machy. Co., Harold, R., St. Louis, Mo.
Winterer Co., Herman L., Philadelphia, Pa.

Machine Tools.

Greaves, Klineham Tool Co., The, Cincinnati, O.
Vonnegut Machinery Co., Indianapolis, Ind.

Machinists. (Engineers.)

Savannah Iron Works, Savannah, Ga.
Universal Machine Co., Baltimore, Md.

Magnesia Materials.

Johns-Manville Co., H. W., New York, N. Y.

Magnetic Separators.

Buckanan & Co., Inc. C. G., New York, N. Y.
Paxson Co., J. W., Philadelphia, Pa.

Mail Chutes.

Cutler Mail Chute Co., Rochester, N. Y.

Mantels. (Tile.)

Northcross Mantel Co., W. J., Memphis, Tenn.

Mantels. (Wooden.)

Northcross Mantel Co., W. J., Memphis, Tenn.

Mechanical Draft.

Buffalo Forge Co., Buffalo, N. Y.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Metal Ceilings. [See Ceilings, Metal.]

Metaline Co., Long Island City, N. Y.

Metal. (For Tanks, Culverts, Roofing, etc.)

Portsmouth Steel Co., Portsmouth, O.

Metal Culverts. [See Culverts.] (Corrugated Metal.)

Portsmouth Steel Co., Portsmouth, O.

Metal Shingles. [See Shingles.] (Metal.)

Portsmouth Steel Co., Portsmouth, O.

Metal Stamping.

Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.

Metal Window Frames and Sash. [See Window Frames and Sash.] (Fireproof.)

Bliss Co., E. W., Brooklyn, N. Y.

Meters. (Water.)

Alberger Pump & Condenser Co., New York, N. Y.

Meter Boxes, Couplings, Gauges. (Water.)

Clark Co., H. W., Matteson, Ill.

Micrometers, Calipers, etc.

Starrett Co., L. S., Athol, Mass.

Milk Filters. (Liquor, Milk, etc.)

International Filter Co., Chicago, Ill.

Mill Engineers and Architects.

O'Brian, W. C., Memphis, Tenn.

Mill Supplies.

Bailey-Libby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Gainesville Iron Works, Gainesville, Ga.
Louisard Iron Works, Augusta, Ga.
Lunkenheimer Co., The, Cincinnati, O.
Mecklenburg Iron Works, Charlotte, N. C.
Salem Foundry & Machine Wks., Salem, Va.
Starr Co., H. F., Baltimore, Md.
Wolf Co., Chambersburg, Pa.

Mixers. (Concrete.)

Atlas Engineering Co., Milwaukee, Wis.

Mixing Machinery.

Dunning, W. D., Syracuse, N. Y.

Mortar Colors.

Chattanooga Paint Co., Chattanooga, Tenn.

Motor Trucks. (Electric.)

General Vehicle Co., Long Island City, N. Y.

Motor Trucks. (Gasoline.)

White Co., The, Cleveland, O.

Motor Trucks. (Second Hand.)

Mar-Del Mobile Co., Baltimore, Md.

Music Wire.

Waterbury Co., The, New York, N. Y.

Nails. (Out.)

La Belle Iron Works, Steubenville, O.

Nails and Spikes.

La Belle Iron Works, Steubenville, Ohio.

Nuts. [See Bolts, Nuts, Rivets, etc.]

La Belle Iron Works, Steubenville, Ohio.

Office Furniture (Steel)

Merritt & Co., Camden, N. J.

Oil. (Creosote.)

Barrett Mfg. Co., Philadelphia, Pa.

Oil. (Lubricating, Etc.)

Albany Lubricating Co., New York, N. Y.
Galena Signal Oil Co., Franklin, Pa.
Gulf Refining Co., Pittsburgh, Pa.
Robinson & Son Co., Wm. C., Baltimore, Md.

Oil Cans.

Wall Mfg. Supply Co., P., Allegheny, Pa.

Oil Engines. [See Engines (Oil).]

Stewart Heater Co., Buffalo, N. Y.

Oil Separators.

Stewart Heater Co., Buffalo, N. Y.

Oil Well Machinery.

Keystone Steam Well Mch. Co., Beaver Falls, Pa.

Oil Well Tubing and Casing.

Ryers Co., A. M., Pittsburgh, Pa.

Ore Handling Machinery. [See Coal Handling Machinery.]

Ryers Co., A. M., Pittsburgh, Pa.

Ornamental Iron Works.

Bolles Iron & Wire Wks., J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
Cincinnati Mfg. Co., Cincinnati, O.
Dow Wire & Iron Works, Louisville, Ky.
Ohio Elevator & Mch. Co., The, Columbus, O.
Schrieber & Sons Co., The, Cincinnati, O.
Snead Architectural Iron Works, Louisville, Ky.

Ovens. (Baking, Enameling, Japanning.)

Oven Equipment & Mfg. Co., The, New Haven, Conn.

Oxygen.

International Oxygen Co., New York, N. Y.

Oxygen Generators.

International Oxygen Co., New York, N. Y.

Oxy-Acetylene Welding and Cutting Outfit and Supplies.

International Oxygen Co., New York, N. Y.

Packing. (Asbestos, Metallic, Rubber, Leather, etc.)

Graton & Knight Mfg. Co., Worcester, Mass.
Jenkins Bros., New York, N. Y.
Johns-Manville Co., H. W., New York, N. Y.
Power Specialty Co., New York, N. Y.
United Lead Co., New York, N. Y.

Packing. (Lead Wool.)

United Lead Co., New York, N. Y.

Packing. (Sheet.)

Goodyear Tire & Rubber Co., Akron, Ohio.

Packing. (Valve Stem.)

Goodyear Tire & Rubber Co., Akron, Ohio.

Paint. (Cement Floors, Masonry, Stucco, etc.)

Cheesman & Elliott, New York, N. Y.

Paint. (Metal Surfaces.)

Cheesman & Elliott, New York, N. Y.

Paint. (Roofing, Building, etc.)

Cameron & Barkley Co., Charleston, S. C.

Paper. (Roofing, Building, Sheeting, etc.)

Barrett Mfg. Co., Philadelphia, Pa.

Patents and Inventions.

Russell Machine Co., F. K., Dallas, Tex.

Patent Attorneys.

Brown, Eugene C., Washington, D. C.
Chandler & Chandler, Washington, D. C.
Coleman, Walter E., Washington, D. C.
Duffie & Co., John S., Washington, D. C.
Evans & Co., Victor J., Washington, D. C.
Fitzgerald & Co., W. T., Washington, D. C.
Hill, H. S., Washington, D. C.
Hodges, Vernon E., Washington, D. C.
Jenner, Herbert, Washington, D. C.
Lacey, R. S. & A. R., Washington, D. C.
McLaudie, A. S., Chattanooga, Tenn.

Paving Bricks.

Adamantine Clay Products Co., North Mountain, W. Va.

Paving Contractors.

Dolanway Paving Co., New York, N. Y.

Paving Blocks. (Crescoted.)

International Crescoting & Construction Co., Galveston, Tex.

Paving Blocks. (Granite.)

Southern Marble & Granite Co., The, Spartansburg, S. C.

Paving Systems. (Concrete.)

Dolanway Paving Co., New York, N. Y.

Perforated Metal.

Caldwell & Son, H. W., Chicago, Ill.
Eddie Perforating Co., Rochester, N. Y.
Hendricks Mfg. Co., The, Carbondale, Pa.
Manhattan Perforated Metal Co., New York, N. Y.
Mundt & Sons, Charles, Jersey City, N. J.

Petroleum Refiners.

Gulf Refining Co., Pittsburgh, Pa.

Phosphate Machinery.

Alsing Engineering Co., J. R., New York, N. Y.

Pig Iron.

La Belle Iron Works, Steubenville, O.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., B'gh'm, Ala.

Pile Drivers.

Volcan Iron Works, Chicago, Ill.

Piling. (Crescoted.)

American Crescoting Works, New Orleans, La.
Intern'l Crescoting & Const. Co., Galveston, Tex.
Southern Crescoting Co., Ltd., Slidell, La.

Pillow Blocks.

Golden's Foundry & Machine Co., Columbus, Ga.

Pipe. (Cast Iron.)

Allegheny Steel Co., Pittsburgh, Pa.
La Belle Iron Works, Steubenville, Ohio.
National Tube Co., Pittsburgh, Pa.
Youngstown Sheet & Tube Co., Youngstown, O.

Pipe. (Steel.)

American Cast Iron Pipe Co., Birmingham, Ala.
American Pipe & Construction Co., Phila., Pa.
Clow & Sons, James H., Chicago, Ill.
Donaldson Iron Co., Emaus, Pa.
Glasgow Pipe & Foundry Co., Lynchburg, Va.
Greuspon's Sons Iron & Steel Co., Jos., St. Louis, Mo.

Pipe. (Wrought Iron.)

Lynchburg Foundry Co., Lynchburg, Va.
Massillon Iron & Steel Co., Massillon, O.
Standard Cast Iron Pipe & Fdry. Co., Bristol, Pa.
U. S. Cast Iron Pipe & Fdry. Co., Harrington, N. J.
Warren Fdry. & Mch. Co., New York, N. Y.
Wood & Co., R. D., Philadelphia, Pa.

CLASSIFIED INDEX OF ADVERTISEMENTS.

Pulleys. (Friction Clutch.)

Caldwell & Son Co., H. W., Chicago, Ill.
Crescon-Morris Co., Philadelphia, Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Moore & White Co., The, Philadelphia, Pa.
Poole Engineering & Mach. Co., Baltimore, Md.
Wood's Sons Co., T. B., Chambersburg, Pa.

Pulleys. (Steel Rim.)

Medart Patent Pulley Co., St. Louis, Mo.

Pulleys. (Wood Split.)

Caldwell & Son Co., H. W., Chicago, Ill.
Lane Mfg. Co., Montpelier, Vt.
Medart Patent Pulley Co., St. Louis, Mo.
Reeves Pulley Co., Columbus, Ind.
Saginaw Mfg. Co., Saginaw, Mich.
Salem Foundry & Machine Wks., Salem, Va.

Pulleys, Shafting and Hangers.

Caldwell & Son Co., H. W., Chicago, Ill.
Crescon-Morris Co., Philadelphia, Pa.
Dodge Manufacturing Co., Milwaukee, Ind.
Golden's Foundry & Mach. Co., Columbus, Ga.
Jeffrey Mfg. Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lane Mfg. Co., Montpelier, Vt.
Link-Belt Co., Nictown (Philadelphia), Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Poole Engineering & Mach. Co., Baltimore, Md.
Wood's Sons Co., T. B., Chambersburg, Pa.

Pulverizers.

Alsing Engineering Co., J. R., New York, N. Y.
Austin Mfg. Co., Chicago, Ill.
Gründler Pat. Crusher & Pulv. Co., St. Louis, Missouri.
Jeffrey Mfg. Co., Columbus, O.
McLachlan-Stone Mach. Co., Hollidaysburg, Pa.
Raymond Bros., Impact Pulv. Co., Chicago, Ill.
Stedman's Foundry & Machine Wks., Aurora, Ind.
Western Wheelbarrow Co., Aurora, Ill.

Pumping Machinery.

Alberger Pump & Condenser Co., New York, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Cook Well Co., The, St. Louis, Mo.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Erie Pump & Engine Works, Erie, Pa.
Goulds Mfg. Co., Seneca Falls, N. Y.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Moffatt Machinery Mfg. Co., Charlotte, N. C.
Morris Machine Works, Baldwinville, N. Y.
Myers & Bros., F. E., Ashland, O.
Norborn Engineering Co., Philadelphia, Pa.
Sydnor Pump & Well Co., Inc., Richmond, Va.
Union Steam Pump Co., Battle Creek, Mich.
Wood & Co., R. D., Philadelphia, Pa.
Worthington, Henry R., Harrison, N. J.

Pumps. (Air.)

Blakelee Mfg. Co., Du Quoin, Ill.

Pumps. (Boiler Feed.)

Alberger Pump & Condenser Co., New York, N. Y.
Blakelee Mfg. Co., Du Quoin, Ill.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Jeansville Iron Works Co., Hazleton, Pa.
Moffatt Machinery Mfg. Co., Charlotte, N. C.
Murray Iron Works Co., Burlington, N. Y.
Myers & Bros., F. E., Ashland, O.
Union Steam Pump Co., Battle Creek, Mich.

Pumps. (Centrifugal.)

Alberger Pump & Condenser Co., New York, N. Y.
Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
De Lavie Steam Turbine Co., Trenton, N. J.
Erie Pump & Engine Works, Erie, Pa.
Jeansville Iron Works Co., Hazleton, Pa.
Morris Machine Works, Baldwinville, N. Y.
Norborn Engineering Co., Philadelphia, Pa.
Pacific Flushing Tank Co., New York, N. Y.
Wood & Co., R. D., Philadelphia, Pa.
Worthington, Henry R., Harrison, N. J.

Pumps. (Deep Well.)

Cameron Steam Pump Wks., A. S., New York, N. Y.
Goulds Mfg. Co., Seneca Falls, N. Y.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Layne & Bowler Co., Houston, Tex.

Pumps. (Dredging.)

Buffalo Steam Pump Works, Buffalo, N. Y.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Erie Pump & Engine Works, Erie, Pa.
Goulds Mfg. Co., Seneca Falls, N. Y.
Morris Machine Works, Baldwinville, N. Y.
Norborn Engineering Co., Philadelphia, Pa.
Wood & Co., R. D., Philadelphia, Pa.

Pumps. (Hydraulic.)

Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Cardwell Machine Co., Richmond, Va.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Erie Pump & Engine Works, Erie, Pa.
French Oil Mill Mchry. Co., The, Piqua, O.

Pumps. (Oil and Gasoline.)

Keystone Boiler & Fdry. Co., Columbia, Pa.

Pumps. (Steam.)

Alberger Pump & Condenser Co., New York, N. Y.
Blake & Knowles Steam Pump Works, East Cambridge, Mass.
Blakelee Mfg. Co., Du Quoin, Ill.
Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Cameron & Barkley Co., Charleston, S. C.
Clayton Air Compressor Works, Cambridge, Mass.
Cook Well Co., The, St. Louis, Mo.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Fairbanks-Morse & Co., Atlanta, Ga.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Murray Iron Works Co., Burlington, Ia.
Scranton Pump & Well Co., Scranton, Pa.
Snow Steam Pump Works, The, New York, N. Y.
Sydnor Pump & Well Co., Inc., Richmond, Va.
Union Steam Pump Co., Battle Creek, Mich.
Worthington, Henry R., Harrison, N. J.

Pumps. (Turbine Driven.)

Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Pumps. (Vacuum.)

Cameron Steam Pump Wks., A. S., New York, N. Y.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Union Steam Pump Co., Battle Creek, Mich.

Pumps. (Water-works.)

Goulds Mfg. Co., Seneca Falls, N. Y.

Pump Leathers.

Graton & Knight Mfg. Co., Worcester, Mass.

Punches and Dies.

American Die & Tool Co., Reading, Pa.

Punching and Shearing Machinery.

Bliss Co., E. W., Brooklyn, N. Y.

Racks (For Pattern Storage.)

Merritt & Co., Camden, N. J.

Railroads. [See Industrial, Agricultural and Commercial Opportunities.]

Railroad Equipment and Supplies. (New and Second-hand.)

American Frog & Switch Co., Hamilton, O.
Bailey-Lobby Co., The, Charleston, S. C.
Birmingham Rail & Loco. Co., Birmingham, Ala.
Cincinnati Frog & Switch Co., Cincinnati, O.
Curd, Geo. B., Cincinnati, O.
Fairbanks-Morse & Co., Atlanta, Ga.
Foster Co., L. B., Pittsburgh, Pa.
Georgia Car & Locomotive Co., Atlanta, Ga.

Green Equipment Co., L. A., Pittsburgh, Pa.
Grimeshaw, Wm. B., Philadelphia, Pa.
Hirsch Rolling Mill Co., St. Louis, Mo.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Hyde, Chas., Pittsburgh, Pa.
Kilby Frog & Switch Co., Birmingham, Ala.
MacLeary, J. H., Suffolk, Va.
National Steel Rail Co., St. Louis, Mo.
Newhall Eng. Co., Geo. M., Philadelphia, Pa.
Read Co., Howard W., Pittsburgh, Pa.
Robinson & Orr, Pittsburgh, Pa.
Sherwood, E. O., New York, N. Y.
Southern Iron & Equipment Co., Atlanta, Ga.
Steel Rail Supply Co., The, New York, N. Y.
United States Rail Co., Cincinnati, O.
Weir Frog Co., Cincinnati, O.
Wilson & Co., E. H., Philadelphia, Pa.
Wilson Mach. Co., Harold R., St. Louis, Mo.
Zelicker Supply Co., Walter A., St. Louis, Mo.

Railroad Frogs & Switches.

American Frog & Switch Co., Hamilton, O.
Cincinnati Frog & Switch Co., Cincinnati, O.
Cunley Frog & Switch Co., Memphis, Tenn.
Easton Car & Construction Co., Easton, Pa.
Kilby Frog & Switch Co., Birmingham, Ala.
Newhall Engineering Co., Geo. M., Philadelphia, Pa.
Robinson & Orr, Pittsburgh, Pa.
Sweet's Steel Co., Williamsport, Pa.
Weir Frog Co., Cincinnati, O.

Rails. (Steel.)

Carnegie Steel Co., Pittsburgh, Pa.
Continental Iron & Steel Co., New York, N. Y.
Foster Co., L. B., Pittsburgh, Pa.
Frank, J. E., Atlanta, Ga.
Green Equipment Co., L. A., Pittsburgh, Pa.
Gulf States Steel Co., Birmingham, Ala.
Hirsch Rolling Mill Co., St. Louis, Mo.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Hyde Bros. Steel & Rail Co., Pittsburgh, Pa.
Hyde, Chas., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.
Levis & Co., Henry, Philadelphia, Pa.
MacLeary, J. H., Suffolk, Va.
National Steel Rail Co., St. Louis, Mo.
Newhall Eng. Co., Geo. M., Philadelphia, Pa.
Republic Iron & Steel Co., Youngstown, O.
Robinson & Orr, Pittsburgh, Pa.
Sherwood, E. O., New York, N. Y.
Southern Iron & Equipment Co., Atlanta, Ga.
Steel Rail Supply Co., The, New York, N. Y.
Sweet's Steel Co., Williamsport, Pa.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
United States Rail Co., Cumberland, Md.
Wilson & Co., E. H., Philadelphia, Pa.

Rail Bonds.

American Steel & Wire Co., Chicago, Ill.

Rail Braces, Crossings, etc. [See R. R. Frogs and Switches.]

Railings and Grilles. (Brass.)

Newman Mfg. Co., Cincinnati, O.

Railways. (Industrial.)

Chase Fdry. & Mfg. Co., Columbus, O.
Cincinnati Frog & Switch Co., Cincinnati, O.
Easton Car & Construction Co., Easton, Pa.
Hunt Co., Inc., C. W., West New Brighton, N. Y.
Link-Belt Co., Nictown (Philadelphia), Pa.

Rams. (Hydraulic.) [See Hydraulic Ram.]

Reamers.

American Die & Tool Co., Reading, Pa.

Reeds.

American Supply Co., Providence, R. I.

Refrigerating Machinery and Apparatus.

Huesteman & Cramer Co., The, Detroit, Mich.
Remington Machine Co., Wilmington, Del.
Viller Mfg. Co., Milwaukee, Wis.
Vort Machine Co., Henry, Louisville, Ky.
York Mfg. Co., York, Pa.

Reinforcing Bars. [See Concrete Reinforcing Bars.]

Riveters. (Pneumatic.)

Independent Pneumatic Tool Co., Chicago, Ill.

Road Machinery.

Austin Bros., Atlanta, Ga.
Austin-Western Road Mchry. Co., The, Chicago, Ill.
Buffalo Steam Roller Co., Buffalo, N. Y.
Contractors Mchry. & Supply Co., Pittsburgh, Pa.
Erie Machine Shops, Erie, Pa.
Gallon Iron Works & Mfg. Co., The, Gallon, Ohio.
Holt Manufacturing Co., The, Peoria, Ill.
Huber Mfg. Co., The, Marion, Ohio.
Kelly Springfield Road Roller Co., Springfield, O.
Syracuse Chilled Iron Co., Syracuse, N. Y.
Universal Road Mchry. Co., Kingston, N. Y.
Western Wheelbarrow Co., Aurora, Ill.
Wheeling Mold & Fdry. Co., Wheeling, W. Va.

Roadmaking Materials.

Austin Bros., Atlanta, Ga.
Barber Asphalt Paving Co., Philadelphia, Pa.
Barrett Mfg. Co., Philadelphia, Pa.
Standard Oil Co., Inc., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.

Road Binders.

Barber Asphalt Paving Co., Philadelphia, Pa.
Barrett Mfg. Co., Philadelphia, Pa.
Standard Oil Co., Inc., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.

Road Rollers. (Steam.)

Austin-Western Road Mchry. Co., The, Chicago, Ill.
Barber Asphalt Paving Co., The, Buffalo, N. Y.
Buffalo Steam Roller Co., Buffalo, N. Y.
Erie Machine Shops, Erie, Pa.
Huber Mfg. Co., The, Marion, Ohio.
Kelly Springfield Road Roller Co., Springfield, O.
Universal Road Mchry. Co., Kingston, N. Y.

Road Oil.

Gulf Refining Co., Pittsburgh, Pa.
Standard Oil Co., Inc., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.

Road Preservatives.

Barrett Mfg. Co., Philadelphia, Pa.
Gulf Refining Co., Pittsburgh, Pa.
Standard Oil Co., Inc., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.

Road Scarifiers.

Buffalo Steam Roller Co., Buffalo, N. Y.
Gallon Iron Works & Mfg. Co., The, Gallon, Ohio.
Huber Mfg. Co., The, Marion, Ohio.

Rock Crushers. [See Crushers, Rock.]

Roller Covering Supplies.

American Supply Co., Providence, R. I.

Roofing Caps.

Robertson Steel & Iron Co., W. F., Cincinnati, O.

Roofing. (Ready Prepared: Felt, Tar, Asbestos, Asphalt.)

American Sheet & Tin Plate Co., Pittsburgh, Pa.
Asbestos Protected Metal Co., Beaver Falls, Pa.
Asphalt Ready Roofing Co., New York, N. Y.
Barber Asphalt Paving Co., Philadelphia, Pa.
Barrett Mfg. Co., Philadelphia, Pa.
Cameron & Barkley Co., Charleston, S. C.
Chesapeake Roofing & Pipe Covering Co., Baltimore, Md.
Johns-Manville Co., H. W., New York, N. Y.
Standard Paint Co., The, New York, N. Y.

Roofing. (Metal Shingles.) [See Shingles, Metal.]

Cortright Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., The, Cincinnati, O.

Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
Milwaukee Corrugating Co., Milwaukee, Wis.

Roofing. (Slate.)

East Bangor Consol. Slate Co., East Bangor, Pa.
Genuine Bangor Slate Co., Easton, Pa.
Johnson, E. J., New York, N. Y.

Roofing and Siding. (Metal.)

American Sheet & Tin Plate Co., Pittsburgh, Pa.
Asbestos Protected Metal Co., Beaver Falls, Pa.
Cameron & Barkley Co., Charleston, S. C.
Cortright Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., The, Cincinnati, O.
Hyndman Roofing Co., Cincinnati, O.
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
Milwaukee Corrugating Co., Milwaukee, Wis.
Moeschl-Edwards Corrugating Co., Covington, Ky.
Portsmouth Steel Co., Portsmouth, O.
Southern Sheet & Tin Plate Co., Ashland, Ky.
Tennessee Metal Culvert Co., Nashville, Tenn.
Youngstown Sheet & Tube Co., Youngstown, O.

Rope. (Manila, Sisal, Hemp, etc.)

Broderick & Bascom Rope Co., St. Louis, Mo.
Columbian Rope Co., Auburn, N. Y.
Plymouth Cordage Co., North Plymouth, Mass.
Waterbury Co., New York, N. Y.
Wood's Sons Co., T. B., Chambersburg, Pa.

Rope. (Wire.)

American Steel & Wire Co., Chicago, Ill.
Broderick & Bascom Rope Co., St. Louis, Mo.
Hunt Co., Inc., C. W., West New Brighton, N. Y.
Waterbury Co., New York, N. Y.

Rope Drives.

Caldwell & Son, H. W., Chicago, Ill.
Crescon-Morris Co., Philadelphia, Pa.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Waterbury Co., New York, N. Y.
Wood's Sons Co., T. B., Chambersburg, Pa.

Rubber Goods.

Electric Hose & Rubber Co., Wilmington, Del.
Eureka Fire Hose Mfg. Co., New York, N. Y.
Goodyear Tire & Rubber Co., Akron, Ohio.

Rules. (Steel.)

Lufkin Rule Co., Saginaw, Mich.
Starrett Co., L. S., Athol, Mass.

Sales and Vaults.

York Safe & Lock Co., York, Pa.

Sand.

Arundel Sand & Gravel Co., Baltimore, Md.
Kirkpatrick Sand & Cement Co., Birmingham, Ala.

Sand. (Foundry.)

Newport Sand Bank Co., Inc., Newport, Ky.

Sap Stain Preventive.

Church & Dwight Co., New York, N. Y.

Sash Chain.

Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.

Saws.

Gerlach Co., Peter, Cleveland, O.
Huthier Bros. Saw Mfg. Co., Inc., Rochester, N. Y.
Smith Machine Co., H. B., Smithville, N. J.
Sydnor Pump & Well Co., Inc., Richmond, Va.

Saws. (Band.)

Smith Machine Co., H. B., Smithville, N. J.

Saws. (Hack.)

Starrett Co., L. S., Athol, Mass.

Sawmill Dogs.

Soule Steam Feed Works, Meridian, Miss.

Sawmills.

Gainesville Iron Works, Gainesville, Ga.
Gibbs Machinery Co., Inc., Columbia, S. C.
Hench & Dringold Co., York, Pa.
Knight Mfg. Co., Canton, O.
Lane Mfg. Co., Montpelier, Vt.
Mecklenburg Iron Works, Charlotte, N. C.
Schofield Iron Works, Macon, Ga.
Southern Engine & Boiler Wks., Jackson, Tenn.
Sydnor Pump & Well Co., Inc., Richmond, Va.

Sawmill Machinery.

Bailey-Lobby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Chase Turbine Mfg. Co., Orange, Mass.
Knight Mfg. Co., Canton, O.
Lane Mfg. Co., Montpelier, Vt.
Mecklenburg Iron Works, Charlotte, N. C.
Schofield Iron Works, Macon, Ga.
Southern Engine & Boiler Wks., Jackson, Tenn.
Sydnor Pump & Well Co., Inc., Richmond, Va.

Saw Sharpeners.

Carborundum Co., Niagara Falls, N. Y.

Saw Sharpeners and Files. (Cotton Gin.)

Carver Cotton Gin Co., East Bridgewater, Mass.

Saving Outfits. (Contractors and Industrial.)

Rutland Foundry & Machine Co., Bennington, Vt.

Scales.

Standard Scale & Supply Co., Pittsburgh, Pa.

Scrap Iron & Steel.

Kander & Co., H., Bowling Green, Ohio

Screens. (Fly, Window and Door.)

Cincinnati Mfg. Co., Cincinnati, O.

Screens. (Mining, Stone, etc.)

Converse Co., Inc., F. S., Lestershire, N. Y.

Screens. (Mining, Stone, etc.)

Erdle Performing Co., Rochester, N. Y.

Screens. (Mining, Stone, etc.)

Hendrick Mfg. Co., Carbondale, Pa.

Screens. (Mining, Stone, etc.)

Jeffrey Mfg. Co., Columbus, O.

Screens. (Mining, Stone, etc.)

McLachlan-Stone Mach. Co., Hollidaysburg, Pa.

Screens. (Mining, Stone, etc.)

Mundt & Sons, Charles, Jersey City, N. J.

Screens. (Mining, Stone, etc.)

New Jersey Wire Cloth Co., Trenton, N. J.

Screens. (Mining, Stone, etc.)

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New Jersey Wire Cloth Co., Trenton, N. J.

Screens. (Mining, Stone, etc.)

New Jersey Wire Cloth Co., Trenton, N. J.

Sewage Pumping and Disposal Apparatus.
Pacific Flush Tank Co., New York, N. Y.

Shafts. (Automobile

Steam Shovel Chains.
Weimer Chain & Iron Co., Lebanon, Pa.

Steam Shovels.
American Clay Machinery Co., The Bucyrus, Ohio.
Fairbanks Steam Shovel Co., Marion, O.
Keystone Driller Co., Beaver Falls, Pa.
Marion Steam Shovel Co., Marion, Ohio.
Sherwood, E. C., New York, N. Y.

Steam Specialties.
Lankenshimer Co., The Cincinnati, Ohio.
Powell Co., Wm., Cincinnati, O.

Steam Traps.
Jenkins Bros., New York, N. Y.

Steel.
Carnegie Steel Co., Pittsburgh, Pa.
Dietrich Bros., Baltimore, Md.
Gulf States Steel Co., Birmingham, Ala.
Hendrick Mfg. Co., Carbondale, Pa.
Hoffman & Co., Inc., R. C., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
La Belle Iron Works, Steubenville, O.
Lackawanna Steel Co., Lackawanna, N. Y.
Portsmouth Steel Co., Portsmouth, N. H.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
Union Drawn Steel Co., Beaver Falls, Pa.
Union Iron & Steel Co., Alan, Philadelphia, Pa.
Youngstown Sheet & Tube Co., The Youngstown, O.

Steel (Tool).
Bourne-Fuller Co., The Cleveland, Ohio.
McKenna Bros., Brass Co., Pittsburgh, Pa.
Union Drawn Steel Co., Beaver Falls, Pa.

Steel (Vanadium).
Carnegie Steel Co., Pittsburgh, Pa.
Union Drawn Steel Co., Beaver Falls, Pa.

Steel Buildings. (Designers, Builders.)
Amer. Bridge Co. of New York, N. Y.
Belmont Iron Works, Philadelphia, Pa.
Champion Bridge Co., Wilmington, O.
Chesapeake Iron Works, Baltimore, Md.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Phoenix Iron Co., Philadelphia, Pa.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Richmond Structural Steel Co., Richmond, Va.
Schreiber & Sons Co., The L., Cincinnati, O.
Speed Architectural Iron Works, Louisville, Ky.
Turner, C. A. E., Minneapolis, Minn.
Virginia Bridge & Iron Co., Roanoke, Va.

Steel Castings.
Orschel Steel Castings Co., Lansdowne, Pa.
Hoffman & Co., Inc., R. C., Baltimore, Md.
Riverside Steel Casting Co., Newark, N. J.

Steel Plate Work.
Casey-Hedges Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Cokeville Boiler Works, Cookeville, Pa.
Hoffman & Co., Inc., R. C., Baltimore, Md.
Memphis Steel Construction Co., Memphis, Tenn.
Phoenix Iron Co., Philadelphia, Pa.
Struthers-Wells Co., Warren, Pa.

Steel Protector. (Concrete Curb, Steps, etc.)
[See Curb Protector Steel.]

Steel Sheet Piling.
Franks, J. E., Atlanta, Ga.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.

Stencils.
Baltimore Office Supply Co., Baltimore, Md.
Stillis, (Turpentine).
McMillan Bros., Jacksonville, Fla.

Stirrups.
Chesapeake Iron Works, Baltimore, Md.

Stock Certificates, Bonds and Seals.
Baltimore Office Supply Co., Baltimore, Md.

Stock Room Racks, Bins, Etc.
Merritt & Co., Camden, N. J.

Stokers. (Hand.)
Huber Grate Bar & Stoking Co., Baltimore, Md.

Stokers. (Mechanical.)
Babcock & Wilcox Co., New York, N. Y.
Westinghouse Machine Co., Pittsburgh, Pa.

Stone. (Building.)
Bedford Steam Stone Works, Bedford, Ind.
Kirkpatrick Sand & Cement Co., Birmingham, Ala.

Stone and Gravel Plants.
Weller Mfg. Co., Chicago, Ill.

Storage Batteries.
Elec. Storage Battery Co., The Philadelphia, Pa.
Westinghouse Machine Co., Pittsburgh, Pa.

Strapping Leather.
Graton & Knight Mfg. Co., Worcester, Mass.

Structural Steel and Iron.
Allegheny Steel Co., Pittsburgh, Pa.
Amer. Bridge Co. of New York, N. Y.
Belmont Iron Works, Philadelphia, Pa.
Bourne-Fuller Co., The Cleveland, Ohio.
Carnegie Steel Co., Pittsburgh, Pa.
Champion Bridge Co., Wilmington, O.
Chesapeake Iron Works, Baltimore, Md.
Chicago Bridge & Iron Works, Chicago, Ill.
Cincinnati Iron & Steel Co., Cincinnati, O.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Dietrich Bros., Baltimore, Md.
East St. Louis Bridge Co., East St. Louis, Ill.
Easton Car & Construction Co., Easton, Pa.
Grainger & Co., Louisville, Ky.
Greenup's Sons Iron & Steel Co., Jos., St. Louis, Mo.
Hoffman & Co., Inc., R. C., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.
Oregonia Bridge Co., Lebanon, Ohio.
Oronite Steel Construction Co., Memphis, Tenn.
Phoenix Iron Co., Philadelphia, Pa.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Republic Iron & Steel Co., Youngstown, O.
Richmond Structural Steel Co., Richmond, Va.
Scaife & Sons Co., Wm. B., Pittsburgh, Pa.
Schreiber & Sons Co., The L., Cincinnati, O.
Speed Architectural Iron Works, Louisville, Ky.
Southern Sheet & Tin Plate Co., Ashland, Ky.
Savannah Steel Products Co., Savannah, Ga.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
Tennessee Bridge Co., Vincennes, Ind.
Virginia Bridge & Iron Co., Roanoke, Va.

Stump Pullers.
Zimmerman Steel Co., Lone Tree, Iowa.

Sulphur.
Union Sulphur Co., New York, N. Y.

Super-Heaters. (Steam.)
Babcock & Wilcox Co., New York, N. Y.
Power Specialty Co., New York, N. Y.

Surfacing Machines. (For Floors.)
Wayell Chappell & Co., Chicago, Ill.

Surveying Instruments.
Weber & Co., F., Philadelphia, Pa.

Swinging Engines.
Dake Engine Co., Grand Haven, Mich.

Switchboards, Switches, etc.
Fort Wayne Electric Works, Fort Wayne, Ind.
General Electric Co., Schenectady, N. Y.

Switches. [See Railroad Frogs and Switches.]

Switchstands.
Weir Frog Co., Cincinnati, O.

Tackle Blocks. (For Wire or Manila Rope.)
Broderick & Bascom Rope Co., St. Louis, Mo.

Talc and Soapstone Powders.
Georgia Talc Co., Asheville, N. C.

Tanks. (Iron and Steel.)
American Bridge Co., New York, N. Y.
American Water Softener Co., Philadelphia, Pa.
Caldwell Co., Inc., W. E., Louisville, Ky.
Casey-Hedges Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Chicago, Ill.
Cokeville Boiler Works, Cookeville, Pa.
Cole Mfg. Co., R. D., Newnan, Ga.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Dixie Culvert & Metal Co., Atlanta, Ga.
Harry Bros. Co., Newport, Ky.
Hartley Boiler Works, Montgomery, Ala.
Hendricks Mfg. Co., Carbondale, Pa.
Keeler Co., E. Williamsport, Pa.
Keystone Boiler & Foundry Co., Columbia, Pa.
Lombard Iron Works, Augusta, Ga.
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.
Memphis Steel Construction Co., Memphis, Tenn.
New York Central Iron Wks. Co., Hagerstown, Md.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Schodfeld Iron Works, Macon, Ga.
Struthers-Wells Co., Warren, Pa.
Sydney Pump & Well Co., Inc., Richmond, Va.
Tennessee Metal Culvert Co., Nashville, Tenn.
Twin City Boiler Works, Bristol, Va.-Tenn.
Virginia Bridge & Iron Co., Roanoke, Va.
Walsh & Weidner Boiler Co., Chattanooga, Tenn.

Tanks. (Wood.)
Caldwell Co., Inc., W. E., Louisville, Ky.
Davis & Son, G. M., Palatka, Fla.
Sydney Pump & Well Co., Inc., Richmond, Va.

Tapes. (Measuring.)
Lufkin Rule Co., Saginaw, Mich.
Starrett Co., L. S., Athol, Mass.

Telephones. (Supplies, Equipment.)
Piedmont Electric Co., Asheville, N. C.
Western Electric Co., New York, N. Y.

Telephone Service.
American Telephone & Telegraph Co.

Tenoner. (Box and Crate.)
Chase Turbine Mfg. Co., Orange, Mass.

Terra-Cotta. (Ornamental.)
Atlanta Terra-Cotta Co., Atlanta, Ga.
Maryland Terra-Cotta Co., Baltimore, Md.
Pomona Terra-Cotta Co., Pomona, N. C.
Southern Building Material Co., Norfolk, Va.
Stevens' Sons Co., H., Macon, Ga.

Thresholds.
Cardwell Machine Co., Richmond, Va.

Tiering Machines. (Portable.)
Economy Engineering Co., Chicago, Ill.

Tramways. (Portable.)
Consolidated Tramway Co., New York, N. Y.

Tramway. (Wire Rope)
Broderick & Bascom Rope Co., St. Louis, Mo.
Caldwell & Sons Co., H. W., Chicago, Ill.
Consolidated Tramway Co., New York, N. Y.
Link-Belt Co., New York (Philadelphia), Pa.
Waterbury Co., New York, N. Y.

Transformers.
Crocker-Wheeler Co., Ampere, N. J.
Triumph Electric Co., Cincinnati, O.

Trench Excavator. [See Excavator (Trench-)]

Trucks. (Dry Kiln.)
Moore Dry Kiln Co., L., Jacksonville, Fla.

Trucks. (Motor, Gasoline.)
White Co., The Cleveland, O.

Trucks. (Platform, Freight, Mill, Factory, etc.)
Bernstein Mfg. Co., Phila., Pa.

Trucks. (Storage Battery Auto.)
Westinghouse Machine Co., Pittsburgh, Pa.

Trucks. (Storage Battery) [For Warehouses and Industrial Plants]
Elwell Parker Electric Co., The New York, N. Y.

Trust Companies. [See Bankers and Brokers.]

Tube Well Strainers.
Cook Well Co., St. Louis, Mo.

Tubes. (Boiler.)
Allegheny Steel Co., Pittsburgh, Pa.
Cincinnati Iron & Steel Co., Cincinnati, O.
National Tube Co., Pittsburgh, Pa.

Tubing.
La Belle Iron Works, Steubenville, O.
National Tube Co., Pittsburgh, Pa.
Youngstown Sheet & Tube Co., Youngstown, O.

Turbines. (Hydraulic.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Davis Foundry & Machine Wks., Rome, Ga.
Leffel & Co., James, Springfield, O.
Poole Engineering & Mach. Co., Baltimore, Md.
Salem Foundry & Machine Wks., Salem, Va.
Smith Co., S. Morgan, York, Pa.

Turbines. (Steam.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
De Laval Steam Turbine Co., Trenton, N. J.
R. L. Wayne Electric Works, Ft. Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
Terry Steam Turbine Co., Hartford, Conn.
Western Electric Co., New York, N. Y.
Westinghouse Machine Co., Pittsburgh, Pa.

Important Information For Advertisers in Manufacturers Record

Publication day—Every Thursday.

Advertising copy not requiring proof must reach us one week in advance of publication day.

When proof is required, two weeks in advance.

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Four columns to page.

TYPOGRAPHICAL ARRANGEMENT

We desire to use, as far as possible, uniform display type and borders and avoid the use of black background cuts. The uniform border is two-point plain rule for all spaces less than a full page.

Copy for advertisements other than those to be used in special departments should be prepared for two-column measure for spaces less than a quarter page; for a quarter page or larger, in two or four columns.

Tile (Drain)
Gray Concrete Co., Thomasville, N. C.
Oconee Brick & Tile Co., Milledgeville, Ga.

Tile (Interior)
Amer. Enam. Brick & Tile Co., New York, N. Y.
P & F Tile Co., Birmingham, Ala.

Tile. (Mantel and Promenade.)
Hood Brick Co., B. Mifflin, Atlanta, Ga.

Tile (Structural)
Oconee Brick & Tile Co., Milledgeville, Ga.

Timbers. (Crescoted.)
American Crescote Works, New Orleans, La.

Tin and Terne Plates.
American Sheet & Tin Plate Co., Pittsburgh, Pa.

Tobacco Machinery.
Huckey Iron & Brass Works, Dayton, O.
Cardwell Machine Co., Richmond, Va.

Tools. (Mechanists')
American Die & Tool Co., Reading, Pa.
Holland Mfg. Co., Erie, Pa.
Morris Twist Drill & Mch. Co., New Bedford, Mass.

Tools. (Mechanical.)
Starrett Co., L. S., Athol, Mass.

Tools. Pneumatic.
Chicago Pneumatic Tool Co., Chicago, Ill.
Independent Pneumatic Tool Co., Chicago, Ill.

Tools. (Tinner's)
Danzon Metal Works, Hagerstown, Md.

Torches.
Wall Mfg. Supply Co., P., Allegheny, Pa.

Towers. (Electric Transmission.)
American Bridge Co. of New York, N. Y.
Scaife & Sons Co., Wm. B., Pittsburgh, Pa.

Towers. (Steel and Wood.)
Caldwell & Co., Inc., W. E., Louisville, Ky.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Chicago, Ill.
Cole Mfg. Co., R. D., Newnan, Ga.
Columbia Pump & Well Co., Washington, D. C.

Des Moines Bridge & Iron Co., Des Moines, Ia.

Memphis Steel Const. Co., Memphis, Tenn.

Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Track Material. (Steam & Industrial Railroads.)
Conley Frog & Switch Co., Memphis, Tenn.
Upon Nut Co., Cleveland, O.

Traction Engines.
Fairbanks-Morse & Co., Atlanta, Ga.
Heer Engine Co., Portsmouth, O.
Holt Mfg. Co., The Peoria, Ill.
Huber Mfg. Co., The Marion, O.

Tramway. (Overhead.)
Consolidated Tramway Co., New York, N. Y.
Speidel, J. G., Reading, Pa.

Turn Buckles.
Broderick & Bascom Rope Co., St. Louis, Mo.

Turntables.
American Bridge Co., New York, N. Y.
Easton Car & Construction Co., Easton, Pa.
Virginia Bridge & Iron Co., Roanoke, Va.

Twines.
Columbian Rope Co., Auburn, N. Y.
Plymouth Cordage Co., North Plymouth, Mass.

Unions.
Dart Mfg. Co., E. M., Providence, R. I.

National Tube Co., Pittsburgh, Pa.

Vacuum Cleaning Apparatus.
King Co., F. E., Norfolk, Va.

United Electric Co., The Canton, O.

Valves. (Rubber.)
Goodyear Tire & Rubber Co., Akron, Ohio

Valves.
Bourbon Copper & Brass Wks. Co., Cincinnati, O.

Columbian Iron Works, Chattanooga, Tenn.

Frick Co., The Waynesboro, Pa.

Glanorgan Pipe & Fdry Co., Lynchburg, Va.

Jenkins Bros., New York, N. Y.

Lankenshimer Co., The Cincinnati, O.

National Tube Co., Pittsburgh, Pa.

Powell Co., Wm., Cincinnati, O.

Westinghouse Valve Fdry. & Const. Co., Pittsburgh, Pa.

York Mfg. Co., York, Pa.

Valve Boxes.
Clark Co., H. W., Mattoon, Ill.

Varnish.
Berry Bros., Detroit, Mich.

Murphy Varnish Co., Newark, N. J.

Vener Machines.
Titus, E. E., Petersburg, Va.

Ventilators.
Moeschl-Edwards Corrugating Co., Covington, Ky.

Ventilating Apparatus. (Engineers' and Contractors')
Buffalo Forge Co., Buffalo, N. Y.

Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Vises.
Holland Mfg. Co., Erie, Pa.

Wagons. (Dump.)
Troy Wagon Works Co., The Troy, O.

Western Wheelbarrow Co., Aurora, Ill.

Wainscoting. (Tile.)
Northcross Mantel Co., W. J., Memphis, Tenn.

Wall Coping.
Southern Sewer Pipe Co., Birmingham, Ala.

Wall Plugs. (Galvanized.)
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.

Wall Tiles.
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.

Page Woven Wire Fence Co., Adrian, Mich.

Washers. (Ore and Phosphate.)
Haley-Leiby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.

Washers and Rivets. [See Bolts, Nuts, Rivets, Studs and Washers.]

Watchman's Clocks.
Watchman's Clock & Supply Co., New York, N. Y.

Water Filters. (See Filters, Water, etc.)

Waterproofing. (For Brick Work.)

Barrett Mfg. Co., Philadelphia, Pa.

McCormick Waterproof Portland Cement Co., St. Louis, Mo.

Standard Paint Co., The New York, N. Y.

Waterproofing. (For Concrete.)

Barrett Mfg. Co., Philadelphia, Pa.

McCormick Waterproof Portland Cement Co., St. Louis, Mo.

Standard Paint Co., The New York, N. Y.

Water-Softening Apparatus. (Purifying.)

American Water Softener Co., Philadelphia, Pa.

International Filter Co., Chicago, Ill.

N. Y. Cont. Jewell Filter Co., New York, N. Y.

Tucker & Laxton, Charlotte, N. C.

Water-Wheels. [See Turbines. (Hydraulic.)]

Water-Works Supplies and Appliances.

American Cast Iron Pipe Co., Birmingham, Ala.

American Pipe & Const. Co., Philadelphia, Pa.

Bourbon Copper & Brass Wks. Co., Cincinnati, O.

Clark Co., H. W., Mattoon, Ill.

Clow & Sons, James R., Chicago, Ill.

Coldwell-Wilcox Co., Newburgh, N. Y.

Columbian Iron Works, Chattanooga, Tenn.

Donaldson Iron Co., Kansas, Pa.

Glanorgan Pipe & Foundry Co., Lynchburg, Va.

Keystone Pump & Well Engine Co., Beaver Falls, Pa.

Layne & Bowler Co., Houston, Tex.

Leadite Co., Inc., The Philadelphia, Pa.

Lynchburg Foundry Co., Lynchburg, Va.

Mason Iron & Steel Co., Massillon, Ohio.

Pomona Terra-Cotta Co., Pomona, N. C.

Salem Fdry. & Machine Works, Salem, Va.

Standard Cast Iron Pipe & Foundry Co., Bristol, Pa.

Standard Spiral Pipe Works, Chicago, Ill.

Stevens' Sons Co., H., Macon, Ga.

U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.

Warren Foundry & Machine Co., New York, N. Y.

Wood & Co., R. D., Philadelphia, Pa.

Welding. (Oxy-Acetylene Process.)

Prest-O-Lite Co., Inc., The Indianapolis, Ind.

Welding Plants. (Oxy-Acetylene.)

Milburn Co., Alex. N., Baltimore, Md.

Welding Apparatus. (Oxy-Acetylene Process.)

Prest-O-Lite Co., Inc., The Indianapolis, Ind.

Welding Supplies.

Prest-O-Lite Co., Inc., The Indianapolis, Ind.

Well Contractors. (Oil, Artesian, etc.)

Columbia Pump & Well Co., Washington, D. C.

Cook Well Co., The St. Louis, Mo.

Hughes Specialty Well Drill Co., Charleston, S. C.

Lee Bros. & Greer, Spartanburg, S. C.

Stothoff Bros., Flemington, N. J.

Sydney Pump & Well Co., Inc., Richmond, Va.

Well Tools and Supplies.

C

A

Acme Knitting Machine & Needle Co.	1
Adamantine Clay Products Co.	1
Albany Lubricating Co.	1
Albermarle Pippin Co.	1
Alberger Pump & Condenser Co.	1
Allegheny Steel Co.	1
Allen Mfg. Co., Inc.	1
Allis-Chalmers Mfg. Co.	1
Aising Engineering Co., J. R.	1
Aluminum Co. of America	1
American Ballast Co.	2
American Blower Co.	2
American Bridge Co. of New York	2
American Cast Iron Pipe Co.	30
American Clay Mch. Co.	3
American Cotton Oil Co.	7
American Crowsote Works	1
American Die & Tool Co.	9
American Electric Mch. & Elevator Co.	1
Amer. Enam. Brick & Tile Co.	2
American Frog & Switch Co.	7
American Hoist & Derrick Co.	7
American Machine Co.	1
Amer. Pipe & Construc. Co.	2
American Process Co.	1
Amer. Sheet & Tin Plate Co.	2
American Spiral Pipe Works	1
American Steel Dredge Co.	7
American Steel & Wire Co.	7
American Supply Co. of Providence, R. I.	3
American Telephone & Telegraph Co.	1
American Water Softener Co.	1
Anderson & Christie	1
Armco Culvert Publicity Bureau	1
Arnold Co., The	10
Arundel Sand & Gravel Co.	81
Asbestos Protected Metal Co.	24
Asphalt Ready Roofing Co.	1
Assets Purchasing Co.	63
Atlanta, Birmingham & Atlantic R. R.	82
Atlanta Terra Cotta Co.	25
Atlanta & West Point R. R.	84
Atlas Machine Co.	3
Atlas Metal Works	3
Atlas Powder Co.	1
Austin Bros.	22
Austin Mfg. Co.	1
Austin-Western Road Mch. Co.	71

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Bader & Sons Co., E. B.	13
Bailey-Lebby Co.	13
Baldwin Locomotive Works,	72
Tn.	72
Ball Engine Co.	4
Baltimore & Ohio R. R.	85
Baltimore Audi Co.	*
Baltimore Belting Co.	†
Baltimore Office Supply Co.	*
Bannon Pipe Co., P.	31
Barber Asphalt Paving Co.	79
Barrett Co., G. & H.	96
Barrett Mfg. Co.	†
Barrett & Snow Co., O. O.	11
Baylis, John R.	16
Beckwith, J. S.	69
Bedford Steam Stone Works.	24
Belmont Iron Works.	22
Bierckmans, Co., P. J.	16
Birmingham Mfg. Co.	22
Berry Bros., Inc.	†
Berry Fortune Constr. Co.	17
Bewmanger & Co.	24
Birmingham Rail & Loco. Co.	70
Blair & Drane	16
Blackmer & Post Pipe Co.	86
Blake & Knowles Steam Pump	4
Works.	4
Blakenlee Mfg. Co.	†
Bliss Co., E. W.	2
Bystone Mfg. Co.	20
Bolles Iron & Wire Works, J. E.	24
Boomer & Boschert Press Co.	35
Boston Economy Lamp Division,	
National Lamp Works	5
of General Elect. Co.	5
Boston Iron & Metal Co.	68
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Bourbon Copper & Brass Wks.	31
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Crecht Co.	*
Fredrick & Baecom Rope	36
Mfg. Co.	36
Crane & Clarkson.	17
Cryant, A. Glaucom.	16
Cushman, C. G., Co., Inc.	81
Cuckeye Iron & Brass Works.	81
Buffalo Forge Co.	†
Buffalo Steam Pump Co.	85
Buffalo Steam Roller Co.	79
Bullard's Exchange, Baltimore	*
Burr & Son, John T.	†
Burrhoughs Adding Machine Co.	61
Burrroughs Engineering Co.	83
Carrers Co., A. M.	70
Carrers Machine Co., John F.	70

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H. W.	34
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oe Co.	81
o Co.	81
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Inc.	70
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el Co.	71
D.	28
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D. Ltd.	15
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... Co.	6
... Rubber Co.	2
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... (Mfg.)	1
... Mch. Wks.	1
... Co.	1
... Works.	7
... Co.	6
... Mfg. Co.	9
... J.	1
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... Co.	3
... D. Co.	2
... Co.	1
... of Md.	6
... Alto, Md.	6
... West.	6
... Hamond, Va.	8
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... Wj.	75
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... Works	2
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Co.	18
ing & Mfg.	6
oad Roller	75
d.	13
dry, Co.	24
tar Co.	76
Well Eng.	73
Mch. Co.	29
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D.	24
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& Cement	19
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Insurance Co.	35
... & Constr.	6
... & Co.	61
... & Co.	61
... Works Co.	61
Edmund T.	16
... Co.	16
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... Co.	1
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Co	79
Co., Ltd..	11
oiler Wks.	4
Exchange	23

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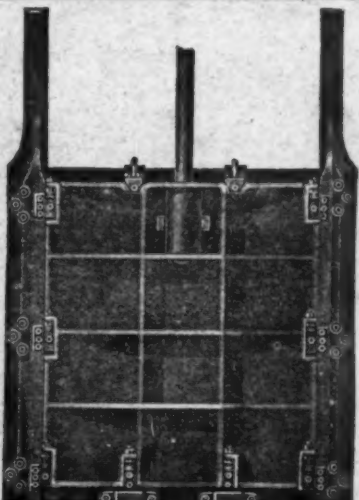
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